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ABSTRACT

The study examined how the coping behaviors and achievement motivation of 181 athletes (aged 18-66) with cerebral palsy or other physical disabilities influence participation in the normalized activity of competitive sport. The project examined the following cognitive aspects of performance: (1) reasons for becoming involved in sports; (2) how the athletes define personal success or failure in sports; (3) how athletes explain winning and losing performances; (4) how athletes cope with disability; (5) how athletes cope with the stresses of competition; and (6) factors which influence an athlete's decision to persist in sport competition. Questionnaires were administered before and after the National Cerebral Palsy/Les Autre Games of 1985. Results indicated that the athletes were characterized as moderately high on coping with disability status and their achievement orientations were similar to those of a sample of non-disabled athletes. Both winners and losers used internal and external attributions to explain performance. Significant differences were noted between severely disabled and less severely disabled athletes in the use of attributions. The coping strategies of problem solving and positive reappraisal were used most often by the athletes. Much of the document consists of appendixes which include the study questionnaires and presentations given at professional meetings. (DB)

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ACHIEVEMENT MOTIVATION, COPING PROCESSES, AND SPORTS PARTICIPATION OF ATHLETES WITH PHYSICAL HANDICAPS:
A Student-Initiated Project

A Final Report to the U.S. Department of Education
Office of Special Education and Rehabilitative Services

for the period

July 1, 1985 to September 15, 1986

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FINAL REPORT CERTIFICATION FORM

GRANT NUMBER: G00-85-30026 PRINCIPAL INVESTIGATOR: Gail Dummer/Sara Overton

INSTITUTION: Michigan State Univ. COMPETITION: SIR

REVIEWER: Becky Calkins

TITLE: Achievement Motivation, Coping Processes and Sports Participation of Athletes with Physical Handicaps

SUMMARY OF FINAL REPORT

Purpose: The purpose of this study was to determine how the coping behaviors and achievement motivation of persons with physical disabilities influence participation and how these relate to persistence in a normalized activity, namely competitive sport.

Methods: The focus of this research was on cognitive characteristics that impact upon achievement. Cognitive aspects of performance examined were:

(a) reasons for becoming involved in sports,
(b) how athletes define personal success or failure in sports,
(c) how athletes explain winning and losing performances,
(d) how athletes cope with disability,
(e) how athletes cope with the stresses of competition,
(f) factors which influence an athlete's decision to persist in sport competition.

Subjects for this study were 181 athletes with cerebral palsy or other physical disabilities who competed in the 1985 National Cerebral Palsy/Les Autres games. Age range of the athletes was from 18 to 66 years; 63% of the participants were male, 82% of the participants were cerebral palsied; and classification of disability levels ranged from 1 through 8 (most to least severely disabled).

Data were collected through use of pre and post questionnaires. The questionnaires assessed selected cognitive variables of a volunteer sample of the partipating athletes and no control groups were included. Questionnaires were used for gathering data on (1) personal history, (2) achievement orientation, (3) coping with disability, (4) performance expectation, (5) performance outcome, (6) attribution associated with performance outcome, (7) persistence expectations, and (8) coping strategies. Two types of data analysis were conducted for each variable. The first level involved descriptive statistics to determine athlete characteristics relative to each variable under study. The second level of analysis involved inferential statistical procedures to determine relationships among sub-groups of subjects and among variables.

Results: Results indicated that the athletes involved in this study were not as experienced in competition as are non-handicapped athletes in national competition. These athletes were characterized as moderately high on coping with disability status and their achievement orientations were similar to those of a sample of non-disabled athletes. Both winners and losers used internal and external attributions to explain performance, and significant differences were noted between more severely disabled and less severely disabled athletes in the use of attributions. Coping strategies of problem solving and positive reappraisal were used most often by these athletes.

Implications: For coaches and athletes, findings concerning achievement orientation can help in understanding motivation and, therefore, the setting of realistic goals by both coaches and athletes. For sports programs, findings suggest that sport programs for disabled persons should be structured so that athletes with different achievement goals will be reinforced for attaining goals in their sport. A second implication for sport programs is the need for more intensive training programs in preparation for elite-level competition. Additional training opportunities and facilities are needed. Suggested are: mental training as preparation for competition and physical education or sports programs for disabled children and youth as a means of helping potential athletes to improve skill levels.

Products: Reports and Papers completed and presented:

Achievement Orientation and Coping Processes of Disabled Athletes

Cognitive Reactions of Athletes with Cerebral Palsy to Success and Failure in Sports Competition

Post-Competitive Coping Strategies of Elite Physically Handicapped Athletes

Coping Strategies of Persons with Physical Disabilities in Sport

At the time of the final report submission five presentations had been made before national organizations and several manuscripts were either in preparation or had been submitted for publication in professional journals.

Recommendations: This study was done with a self-selected group of athletes on relatively short notice, therefore the generalizability of the findings may be open to question. However, as a pioneering effort, the study's findings have raised many interesting questions for rehabilitative psychology, for sports psychology, and for adapted physical education and recreational planning. Researchers and practitioners should find many avenues of inquiry and reassessment to follow. Although the research design is not rigorous, ERIC submission is recommended.

ABSTRACT

The National Cerebral Palsy/Les Autres Games held at Michigan State University in August 1985, provided an opportunity to assess the cognitive characteristics of disabled athletes in national sports competition. This project focused on those cognitive variables which were thought to influence achievement behavior, in particular, achievement behavior in the sport domain. A conceptual model was developed to facilitate predictions and explanations of the relationships of these cognitive variables to outcome measures such as persistence and satisfaction, and of the interrelationships among variables. The model includes four pre-event variables: an athlete's personal background (demographic characteristics, training and competition history); achievement orientations (reasons for becoming involved in sports); coping with disability status (adjustment to the challenges of living with a disability); and expectations about performance (level of expected success). Performance outcomes were assessed both objectively (winning/losing) and subjectively (success/failure). Post-event variables in the conceptual model included attributions (explanations of performance levels), affect (emotional reactions), coping strategies (situation specific ways of managing stress), and future participation (persistence) in sport.

This report describes results relative to constructs in the conceptual model. For example, results indicated that the athletes involved in this study were not as experienced in competition as are non-handicapped athletes in national competition. These athletes were characterized as moderately high on coping with disability status and their achievement orientations were similar to those of a sample of non-disabled athletes. Both winners and losers used internal and external attributions to explain performance, and significant differences were noted between more severely disabled and less severely disabled athletes in the use of attributions. Coping strategies of problem solving and positive reappraisal were used most often by these athletes. Additional data analyses are proposed to further test the validity of these constructs and their interrelationships.

The project has proceeded through four phases: (a) a planning phase which focused on preparation of appropriate questionnaires, selection of data collection assistants, and identification of athletes for participation in this study; (b) a data collection phase which focused on logistics of data collection and administration of questionnaire instruments to athletes in the research sample; (c) a data analysis phase which involved data entry, cleaning the data, assessing psychometric properties of instruments used and testing the links of the conceptual model; and (d) a dissemination phase in which a summary of the research results was produced for athletes and coaches, presentations were made to professional audiences, and manuscripts were prepared for submission to professional journals.

A summary of results has been disseminated to participating athletes, coaches of participating athletes, members of the Games organizing committee, members of the National Consortium on Physical Education and Recreation for the Handicapped, members of the Subcommittee on Sports for the Disabled of the United States Olympic Committee, and professional colleagues. Presentations were made to the American Alliance for Health, Physical Education, Recreation, and Dance; the North American Society for the Psychology of Sport and Physical Activity; the American Association for Counseling and Development; the National Consortium on Physical Education and Recreation for the Handicapped; and the American Psychological Association. Manuscripts of these presentations are appended to this report.

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INTRODUCTION

Persons with physical disabilities continue to be underrepresented in achievement domains such as the competitive labor market, education, and recreation (Harris, 1986). This lack of involvement may be due to factors which are both external and internal to the physically challenged person. External factors focused upon in the literature include environmental barriers and attitudes toward the physically challenged (Vash, 1981). Internal factors include affect and cognitions about performance, factors which have received little attention in the literature. Sport is an example of a normalized achievement domain associated with positive outcomes such as improved physical fitness, better mental health, socialization opportunities, and positive self-concept. Involvement in achievement domains is a desirable rehabilitation goal, and yet limited systematic study of persons with disabilities has been focused upon internal cognitive factors impacting involvement in achievement domains. Such factors include achievement motivation and ability to cope with disability or with stressful or challenging events, particularly in normalized activities.

The purpose of this study was to determine how the coping behaviors and achievement motivation of persons with physical disabilities influence participation and how these relate to persistence in a normalized activity, namely competitive sport. The sport environment was considered to be well-suited for a study of achievement and coping behaviors, since this is a common context in which young people prepare to engage in future domains where achievement and coping are required for continued participation, such as work and independent living. Sport accommodates individuals with varying levels of competence and aspirations and thus a study of the range and type of achievement orientations, coping behaviors, and expectations to persist was warranted.

The focus of this research was cognitive characteristics that impact upon achievement behavior and persistence. Several cognitive aspects of performance were examined, including: (a) reasons for becoming involved in sport; (b) how athletes define personal success or failure in sport; (c) how athletes explain winning and losing performances; (d) how athletes cope with disability; (e) how athletes cope with the stresses of competition; and (f) factors which influence an athlete's decision to persist in sport competition. It was hypothesized that identification of goals and behaviors associated with positive appraisal and expectations to persist in sport may have implications for disabled persons in other areas of achievement as well. The outcomes of this research will represent a significant advance in theoretical knowledge regarding cognitive characteristics associated with persistence of persons with handicapping conditions in achievement domain.

Although sport opportunities for disabled athletes are becoming more prevalent each year, few researchers or program directors have formally investigated the reasons that athletes become involved in sport or what they want from a sport program. The findings from this research have provided some of these answers and may lead to sport programs which are more responsive to the needs of disabled athletes. The results of this research may have implications for participation by persons with disabilities in other achievement activities, such as employment and education. Persons who cope successfully with the limitations imposed by their disabilities, or who are able to cope with the stress and frustrations associated with competition, and who are motivated to achieve, may be more likely to participate in a variety of achievement domains.

REVIEW OF SELECTED LITERATURE

Although this study was a pioneer attempt to investigate the relationships among coping behaviors and achievement motivation variables of persons with physical disabilities, previous research on coping with disability and on achievement motivation in sport provided a theoretical basis for conceptualizing the problem under study. The expectation to persist in an achievement domain was hypothesized to be a complex process involving cognitions about one's disability, the need to demonstrate competence, subjective explanations of success and failure, and the ways one copes with the stresses of competition. To investigate this hypothesis, the constructs of the study were operationalized were as follows: (a) cognitive variables included coping with disability status, achievement orientations, attributions, and situational coping strategies; and (b) outcome variables were expectations to persist in sport, satisfaction with performance, and stress experienced at the Games.

Cognitive Variables

Coping with disability status. Shontz (1975) described disability as a stress condition that requires coping responses. Individuals described as effectively coping with disability reported a positive quality of life, social competence, and acceptance of disability (Blom, Ek & Kulkarni, 1983). Coping is also viewed as an evolving process which is situation-specific (Blom, Miller & Palombi, 1983), thus coping status can be viewed as an assessment of coping at some given point in the individual's coping process. Kulkarni and Blom (1985) conceived of coping as an ongoing process which changes according to individual development and situational context. They developed the Coping with Disability Inventory (CDI), an 80-item 4-point rating scale questionnaire, to assess the current disability coping status of an individual including coping processes and quality of life outcomes.

One might assume that people with disabilities who participate in national sport competition have already achieved competence, not only in meeting the demands of disability and handicap, but also in demonstrating their competence in a particular sport domain. One would expect that these experiences of achievement and competence would be associated with greater coping status and would result in greater quality of life, confidence, and personal satisfaction. Policies and programs to increase opportunities for leisure activity, sports, recreation, and socialization for people with disabilities are partially based upon this premise.

The research literature has not directly addressed the relationship between coping status and participation in sport. This study proposed that an individual's ability to cope with stress and challenge may be one determinant of involvement in sport. Furthermore, coping status may influence an athletes expectations about performance. These assumptions about coping with disability status have been further tested in this research.

Achievement Orientations. Achievement motivation is an important factor affecting an individual's selection of activities (Ewing, 1981; Maehr & Nicholls, 1980) as well as persistence in an activity (Ewing, 1981). Assuming athletes possess a will to achieve, Maehr (1974, 1979) argued that achievement behavior should be studied within a specific context or situation, since the situation will affect the choice of behavior. In this study, that assumption is presumed also to apply to athletes with physical handicaps.

Maehr and Nicholls (1980) proposed three achievement orientations to explain why individuals become involved in sport, why they persist, and why some choose to become involved at elite levels. These orientations, which were confirmed by Ewing (1981), are sport competence, sport mastery, and social approval. The goal of sport competence athletes is to demonstrate ability to others. The goal of sport mastery is to meet the challenge of an activity. The goal of social approval athletes is to please others by trying hard (effort is virtuous).

Subsequent research with non-handicapped athletes has validated these three achievement orientations (Ewing, 1981). An important further finding was that persisters in sport were more sport mastery and social approval oriented than were sport dropouts (Ewing, 1981). Ewing argued that the competitive sport environment may not facilitate the demonstration of ability by sport competence oriented athletes. Also, Ewing discovered two new achievement orientations; cognitive ability and sport venture. These are respectively defined as using leadership skills as well as appropriate strategies in sport competition and enjoying the new and/or adventurous/risky aspects that sport can provide.

Attributions. A cognitive component related to the achievement orientation of athletes is their emotional reaction to the outcome of performance and the influence of their cognitive explanation of these reactions (Weiner, 1972). This emotional reaction or affect refers to the athlete's pride or shame in performance. The attributions (explanations) and affect associated with a specific athletic performance may influence an athlete's future expectations for success or failure as well as his or her decision to continue in sport.

Several investigators have demonstrated that attributions of non-disabled performers to winning and losing (objective outcome) affect subsequent participation and performance in sport. Based on Weiner's (1972) model, explanations given by able-bodied athletes for their performances may be categorized as stable (ability) or unstable (luck, effort) characteristics of the individual and in terms of internal or external focus of control. Although Weiner originally proposed that four attributions (ability, effort, luck, and task difficulty) are operative in achievement situations, research in sport environments has revealed that it is necessary to consider additional attributions which account for situational variables such as individual versus team ability and effort, officiating, and environmental conditions (Bukowski & Moore, 1980; Rejeski & Brawley, 1983; Roberts & Pascuzzi, 1979).

Another important cognitive factor in determining attributions is the manner in which individuals define personal success and failure (subjective outcome) in sport. Roberts and Duda (1984) suggested that interpretation of success or failure depends upon whether the individual perceives that he or she has demonstrated a desirable personal characteristic in competition. Spink and Roberts (1980) further indicated that clear outcomes (satisfied winner or dissatisfied loser) are associated with internal attributions; whereas, ambiguous outcomes (dissatisfied winner or satisfied loser) are more likely to be associated with external attributions.

Situational Coping Strategies. Most research on coping behaviors of persons with disabilities concerns coping with disability rather than coping with challenges of tasks associated with normalized activities. Coping with disability may involve psychological adjustment to changes in one's physical appearance, to limitations of ability, or to the attitudes held by others toward persons with disabilities (Wright, 1983). Coping with disability may also involve physical adjustments such as learning to use prosthetic devices or learning to perform tasks in non-typical ways.

In a more general context, coping is defined as "constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person" (Lazurus & Folkman, 1985, p. 141). The importance of temporal factors, environmental context, and functional outcomes are important in evaluating coping strategies. Each situation involves an internal, cognitive appraisal of the degree of perceived stress, assumptions regarding personal ability to prevent or control consequences, and the repertoire of coping strategies available for use in the situation. In situations appraised as constituting a challenge, such as sport competition, positive outlook and enthusiasm are associated with effective coping responses (Lazurus & Folkman, 1985).

Coping strategies, like affect, are dependent upon a specific situation. Lazurus and Folkman (1985) suggested that coping strategies can be described as those which are problem-focused or emotion-focused. Problem-focused strategies involve constructive efforts to alleviate the stress situation or to address a challenge situation. Emotion-focused coping is directed at regulation of the emotion associated with the stress or challenge condition. Choice of strategy is related to appraisal of the threat, harm or challenge involved in the stress situation. The coping process is characterized by an individual's responses to the phases of a stressful encounter, namely, anticipation, waiting for the results, and dealing with outcome (Folkman & Lazurus, 1985). Lazurus and Folkman identified eight coping strategies typical among adults who cope with various life stresses and of college students coping with exam stress. These strategies are seeking social support, distancing, positive reappraisal, confrontation, escape-avoidance, self-controlling, problem solving, and accepting responsibility. A given coping strategy is not viewed as inherently good or bad, but rather is evaluated in terms of its facilitative outcome for managing the stress or challenge condition.

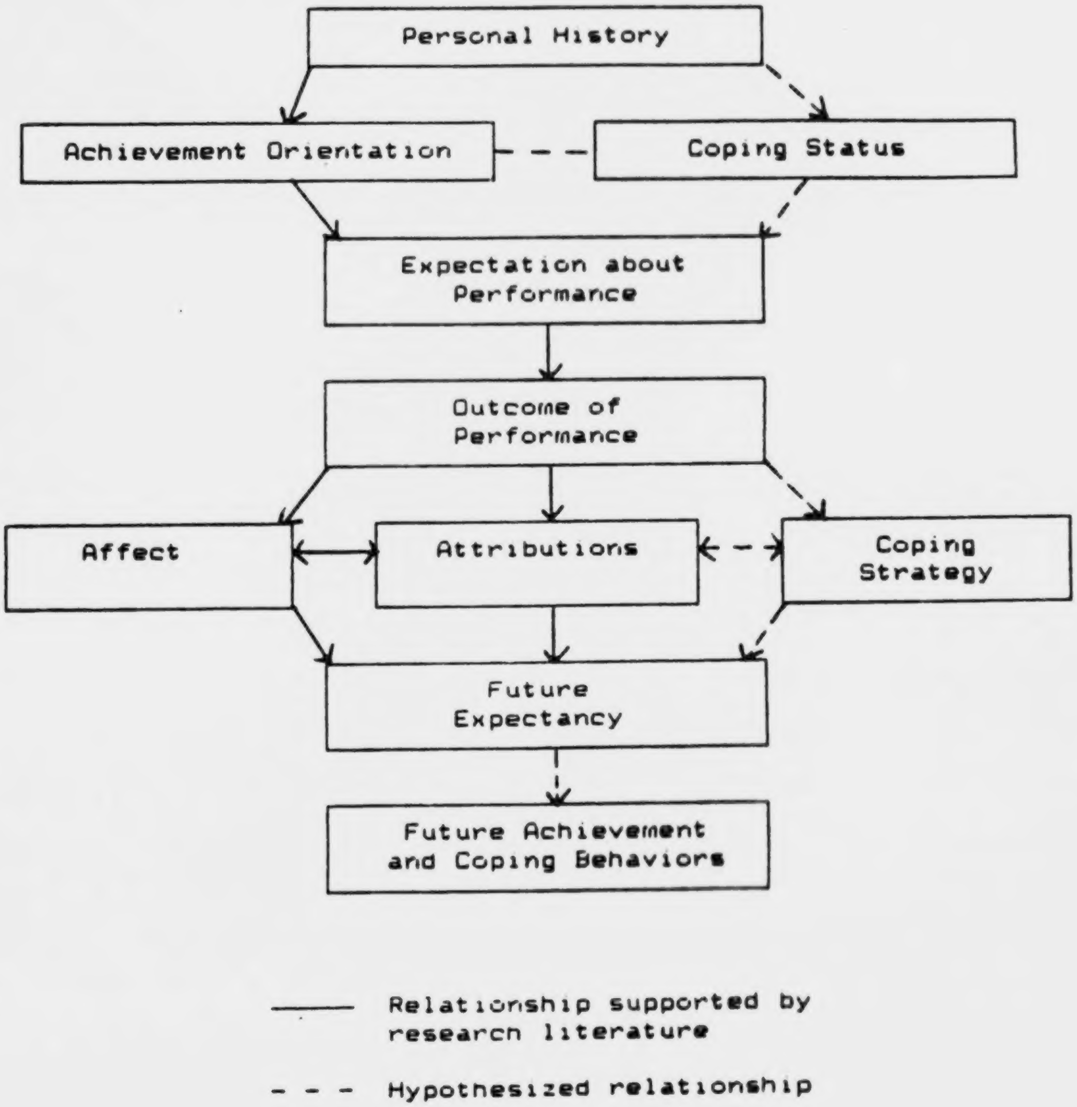
Little is known about coping strategies used by persons with disabilities in response to success or failure in achievement domains. In this research, it was hypothesized that an athlete who uses a problem-focused coping style in reaction to performance which he or she defines as a failure experience might respond by training more diligently for future competition or by improving technique. The athlete who reacts to the same situation with emotion-focused coping might engage in some unrelated behavior (e.g., going out for ice cream) in an effort to feel better. This research also presumes that individuals having high coping with disability status would be more likely to engage in coping strategies, particularly those which assist persons in achievement behavior, namely problem-focused strategies.

Outcome Variable

Persistence. The achievement behavior of interest in this study was persistence in competitive sport. The stated expectation to persist in sport was the operationalized variable of persistence. Persistence relates to an individual's willingness to continue in competitive sport. The literature has related achievement orientations and attributions to persistence with able bodied athletes (Ewing, 1981; Weiner, 1972). If the goals of achievement behavior (achievement orientations) are met, and if athletes are able to avoid low ability explanations of performance, athletes are more likely to continue in sport. It was hypothesized in this study that individuals with high coping with disability status and those using problem-focused coping strategies would be more likely to persist in sport. High coping with disability status would indicate that an individual had successfully coped with disability before competition and the use of problem-focused coping strategies would indicate optimistic thought and intention. Both pre-competition coping with disability pre-competition and optimistic though and intention were considered to be important determiners of the expectation to persist.

The variables discussed thus far represent an interaction of situation and cognitions. Since individual factors are not necessarily sufficient to explain persistence or other achievement behaviors, multivariate approaches that consider the interaction of internal cognitions and situational context are needed to explain persistence. Based on literature reviewed, coping and achievement motivation are hypothesized to be interactive processes which significantly account for an individual's behavior in an achievement situation such as sport. A conceptual model illustrating the contributions and potential interrelationships among the above variables which forms the basis for the questions posed in this research is presented in Figure 1.

Figure 1. Conceptual Model


Personal History
Achievement Orientation
Coping Status
Expectation about Performance
Outcome of Performance
Affect
Attributions
Coping Strategy
Future Expectancy
Future Achievement and Coping Behaviors
Relationship supported by research literature
Hypothesized relationship

Research Questions

This research examined the hypothesized relationships among achievement motivation coping and related cognitive variables and the relationships of these variables to decisions to persist in sport. The model was conceptualized to explain achievement behavior in any domain, e.g., school, work, or social. The questions focused upon in this project are listed below. Other aspects of the model will be tested in future analyses.

1. What is the coping with disability status of athletes with physical disabilities and how does coping status relate to demographic characteristics?
2. What are the achievement goals of athletes with physical disabilities?
3. What is the relationship between coping with disability status and achievement goals?
4. What attributions do these athletes make to objective (winning, losing) and subjective outcomes (subjective success, failure)?
5. What are the post-competition coping strategies used by these athletes post-competition and how does performance outcome influence the choice of coping strategies?
6. What are the expectations of these athletes regarding future persistence in this achievement domain? How do the cognitive variables of coping with disability, achievement orientations, and coping strategies relate to expectations to persist?

METHOD

The data collection strategy for this research can best be characterized as an ex post facto design. Questionnaires assessing selected cognitive variables (i.e., coping with disability status, achievement orientations, attributions, and coping strategies) were administered to a volunteer group of physically challenged athletes before and after participation in national sports competition. Data were analyzed to determine the influences of these variables on outcome measures such as persistence in sport, satisfaction with performance, and level of stress experienced. Additional data analyses were designed to determine interrelationships among variables.

There are limitations to the design of this research. First, no control groups were included. Although control groups consisting of disabled persons not involved in sport or disabled persons involved in other achievement domains would have permitted (a) use of a research design in which more variance could be controlled and (b) as additional insights into the cognitive behaviors of disabled persons, we were unable to identify a suitable control group of disabled persons not involved in sport. Secondly, this research was limited to a volunteer sample of athletes with physical disabilities. Approximately one-fourth of all athletes entered in the 1985 National Cerebral Palsy /Les Autres Games volunteered to participate. Because the Games were a unique event and because data are not available concerning reasons for non-participation, it is not known whether participants are representative of other disabled persons in sport. Hence, the generalizability of these results to similarly disabled persons is limited.

Another limitation involves the selection of variables under study. The conceptual model (see Figure 1) does not include all variables which might influence the outcome variables of persistence, satisfaction, and stress. In addition, this study focused upon selected relationships among variables rather than every hypothesized link of the model. Additional research will be needed to provide a more comprehensive understanding of factors associated with participation in achievement domains by disabled persons. Finally, because there were several schedule changes affecting the various sports events, and because data collection involved contact with athletes immediately prior to and following competition, it was not possible to locate all subjects for each aspect of data collection. Thus, complete data sets are not available for all subjects

Sample

Subjects for this study were 181 athletes with cerebral palsy or other specified physical disabilities (e.g., short stature, muscular dystrophy) who competed in the 1985 National Cerebral Palsy/Les Autres Games. The athletes in this study ranged in age from 18 to 66 years (average=29.7 years). There were more males (63%) than females (37%) and more athletes with cerebral palsy (82%) than les autres (18%) athletes. Most athletes characterized their disabilities as non-progressive (93%) and stable (62%). Most (78%) had acquired their disabilities congenitally. Classification ranged from Level 1 (most severely disabled) to Level 8 (least severely disabled). Figure 2 provides a distribution of athletes by disability classification and gender.

Figure 2. Distribution of Cerebral Palsy and Les Autres Athletes by Classification and Gender

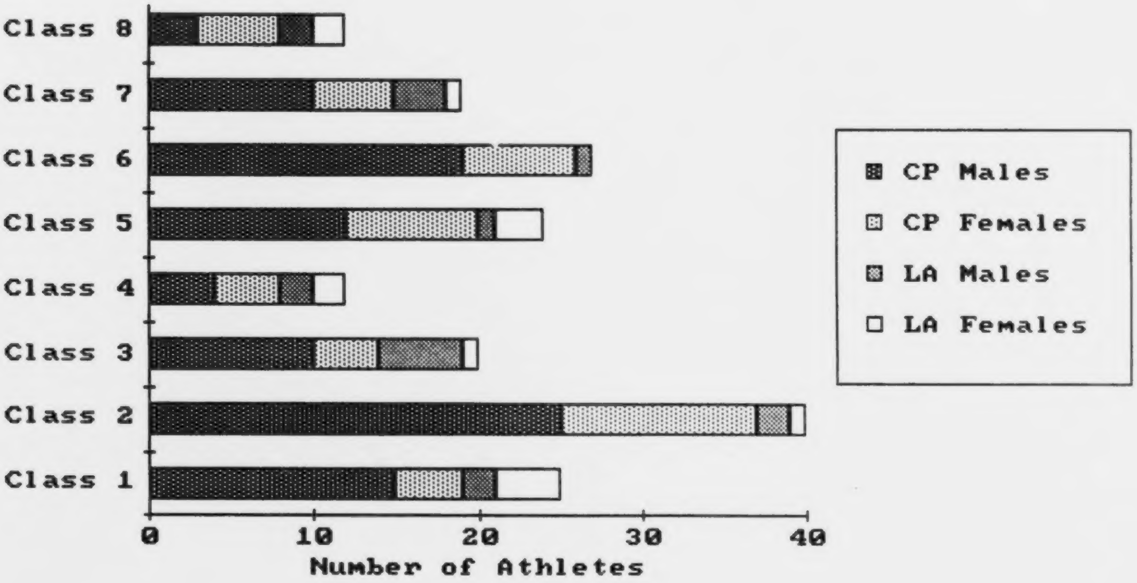


Table 1. Education and Employment Status of Athletes

Highest Level of Education Completed	
Elementary School	6%
Junior high school	6%
Some high school	10%
High school graduate	29%
Some vocational school	2%
Some college	26%
College graduate	14%
Graduate school	7%

Current Employment and Education Status	
Full-time employment	23%
Part-time employment	15%
Full-time student	16%
Part-time student	11%
No school or work	32%

Most athletes were single (85%), few athletes were married (9%) or divorced/widowed (6%). The relative youth of this sample may have affected the marital status distribution. In terms of education and employment, this sample was typically underrepresented in both achievement domains. Table 1 indicates that only 29% of these athletes were high school graduates and that only 23% had full time jobs.

In terms of sport background (81%) followed an organized training schedule, while other (19%) trained whenever they could. Only 17% practiced on a daily basis, with 75% practicing about once a week, and 8% practicing less often than weekly. The majority of athletes in this study (79%) were assisted by a coach during training sessions, whereas 11% received some help from family members or friends, and 10% practiced without coaching.

Most respondents (83%) competed in competitions for disabled athletes rather than in competitions which included able-bodied athletes. Many of the athletes were relatively inexperienced in sport competition, with only 44% reporting that they had competed five or more times prior to the Games. The highest level of prior competition reported by these athletes was international (17%), national (39%), state (27%), regional (85%), and local (9%).

Sports contested at the Games included archery, basketball, boccia, bowling, cross country, cycling, golf, equestrian events, powerlifting, slalom, soccer, swimming, table tennis, track and field, and wheelchair soccer. Most athletes competed in more than one sport, and within sports, in more than one event.

Instrumentation

The questionnaire instruments used to assess each of the variables of interest and the psychometric properties of these measures are described below.

Personal History. An experimenter-developed Personal History Questionnaire was designed to assess demographic characteristics, history of training and competition in sport, disability type, severity of disability, and disability onset (see Appendix A).

Achievement Orientation. The Achievement Orientation Questionnaire (Ewing, 1981) was designed to assess an individual's sport competence, sport mastery, social approval, cognitive ability and sport venture achievement orientation (see Appendix B).

Respondents are asked to describe one success they have experienced in sport, plus the attributions they have made about that success. Ewing (1981) described the procedures for establishing both content and construct validity for this instrument, and reported alpha coefficients for reliability ranging from .80 to .91 with non-handicapped populations.

Coping with Disability. The Coping with Disability Inventory (Kulkarni & Blom, 1985) was designed to assess coping status, defined as an individual's current status within an ongoing coping process (see Appendix C). The instrument assesses behavior process information (coping) and behavior outcome information (competence and quality of life) on a 5-point scale ranging from (1) never/rarely to (5) almost always. The 80 item scale contains questions concerning the individual's coping process, independent living skills, and quality of life. This instrument has been subject to tests of construct validity resulting in a correlation of .53, $p < .01$ with the Harrison Gough California Personality Inventory coping subscales. Reported alpha coefficients were .789 for the process subscale, .835 for the outcome subscale and .892 for the total coping score with a sample of adult American individuals with disabilities involved in centers for independent living, (Kulkarni & Blom, 1985).

Performance Expectation Questionnaire. An experimenter-designed instrument was used to determine expected level of performance, perceived athletic ability, and confidence in ability (see Appendix D). All variables are assessed using Likert-type scales. Respondents were asked to complete this questionnaire before competing in their events.

Performance Outcome. Official records of the athlete's place finish in his or her event were obtained for this variable. Performance outcomes were judged as successes or failures both in terms of objective outcome and subjective outcome. Successful objective outcome was defined as a first, second or third place finish. Subjective outcome was defined as satisfaction with performance on a scale ranging from (9) extremely satisfied to (1) not at all satisfied (see Appendix E).

Attributions. This variable was assessed using an experimenter-developed Post-Competition Inventory. This inventory was designed to assess attributions associated with performance outcomes. Respondents indicated the degree to which various explanations contributed to the success or failure of their performances by using a Likert-type scale ranging from (1) not at all a reason to (9) very much a reason (see Appendix E).

Persistence Expectations. This variable was assessed using an experimenter-developed post-competition inventory. This inventory was designed to assess future expectations to continue in competitive sport. Respondents were asked to state likelihood of persistence on a point scale ranging from (1) very likely to (4) not at all (see Appendix F).

Coping Strategies. The Ways of Coping-Revised Questionnaire was developed by Lazurus & Folkman (1984) to assess coping strategies in a situation-specific context, (see Appendix H). Respondents are asked to answer 67 questions, scaled on a 4-point rating scale ranging from (0) not used to (3) used a great deal. Responses are scored on eight factor-analyzed subscales reported in studies of coping behavior of college students (Folkman & Lazurus, 1985). Internal reliability values reported for the measure is subscales range from .59-.88 (see Appendix G).

Data Analyses

Two types of data analysis were conducted for each variable. The first level of analysis involved descriptive statistics to determine athlete characteristics relative to each variable under study. The second level of analysis involved inferential statistical procedures to determine relationships among sub-groups of subjects and among variables. The specific statistical procedures used are described in the results section.

RESULTS AND DISCUSSION

As suggested by the conceptual model, different cognitive characteristics or behaviors are thought to influence the disabled individual's participation in sport at different points in time. Individual characteristics thought to influence behavior prior to participation, as well as during one's competitive career, include one's ability to cope with disability and one's achievement orientation. Outcomes of participation which must be considered include winning/losing, satisfaction/dissatisfaction, and level of stress experienced. Response variables of interest include attributions to performance outcomes, use of situation-specific coping strategies, and the athlete's plans to persist in sport. The results and discussion section of this report is organized according to the research questions which arise from this conceptual model. Specific topics are addressed in greater detail in Appendices I through L.

Athlete Characteristics

Coping with Disability Status. The mean Coping With Disability Inventory (CDI) score for these athletes was 287.5 (SD=28.6) of a possible 400 points, which is classified as moderately high coping. Individual scores on the CDI ranged from 182 to 353, indicating considerable variability among athletes in coping with disability status. The distribution of scores was used to form subgroups of athletes with similar coping with disability status in order to more effectively analyze the relationship of coping with disability to the variables of interest (e.g., demographic variables). Using the total group mean as the average score, four subgroups were created at -2, -1, +1 and +2 standard deviations from the mean. Group 1 included 31 athletes classified as "low copers." Group 2 included 49 athletes classified as "fair copers." Group 3 included 65 "good copers, and Group 4 included 30 "high level copers."

The coping with disability status for this sample was similar that of a sample of disabled adults involved in community centers for independent living (mean=283.5, SD=27.3). These athletes can be characterized as moderately high copers, which confirms our expectation that athletes had already achieved some level of confidence and social competence in regard to disability prior to their participation in the National Cerebral Palsy/Les Autres Games.

The relationship of coping with disability status to demographic variables was also explored. Due to the exploratory nature of much of this research, it was necessary to establish the relationship of demographic variables to the larger conceptual variable of coping with disability. The impact of demographic variables on coping status with disability was investigated through a series of ANOVA's. Results of these ANOVA's helped identify factors that might impact the interrelationships of variables in the conceptual model (see Figure 1).

Results of a one-way ANOVA for age and coping with disability status groups were significant, F (3,177) $p < .05$. A Scheffe multiple range follow-up test revealed that fair copers differed significantly in age from the other coping groups. Practically speaking, the mean age difference among the groups was not notable. Two outliers (ages 59 and 66) in this subgroup appear to account for the difference as reflected by the larger SD for this group.

Coping with disability status did not differ for females and males. Results of a one-way ANOVA were not significant, F (1,179)=0.35, $p > .05$. However, the proportions of males and females for each coping status group are interesting in that the older group contains a relatively lower proportion of males (59%) and the high copers group has a relatively higher proportion of males (73%) than does the total sample (64%).

The categories used for classifying athletes into levels of competition are based on functional limitations. Coping with disability status did not differ for persons in the various classification levels. Results of a one-way ANOVA were not significant, F (3,150)= 1.33 $p > .05$. In fact, the means scores suggested that disability coping status scores were slightly higher for the more severe impairment groups, although no consistent linear pattern was observed.

No differences in the mean CDI scores were found in a one-way ANOVA among individuals who had achieved different levels of education, F (7,164)=0.35, $p > .05$.

Individuals involved in full or part time work or school were grouped together as "productively involved" and those not involved in school or work as "not productively involved." A 2x4 Chi square analysis for status and level of coping was significant, X^2 (3)=8.77, $p < .05$. Approximately two-thirds of the athletes were productively involved in either school or work. Most of the high copers (97%) were productively involved, whereas only 44% of the low copers were productively involved.

The results indicated that athletes in the study, as a group, can be characterized as coping well with disability. As hypothesized, those who cope more effectively with disability are also more likely to participate in other achievement domains (work, school). Coping with disability status was not found to be a function of demographic characteristics (age, gender, education). The greater representation of males in the Games and among the high copers, although not statistically significant, may reflect societal differences for male participation in achievement situations irrespective of disability. As hypothesized, no differences were found in the impairment classifications among the subgroups of disability coping status. Thus, coping with disability was not related to the severity of functional impairment. This finding supports prior research that there is not a direct linear relationship between severity of disability and extent of psychological adjustment and severity of disability.

Achievement Orientations. Achievement orientations help to explain why people become involved in sport, why they choose to persist or dropout of sport, and why they choose to compete at a particular level of competition. Oblique rotation factor analysis techniques revealed five achievement orientations for athletes with physical disabilities: (1) sport mastery meeting the challenge and demands of an activity; (2) sport competence wanting to demonstrate ability to others; (3) sport venture enjoying the new and/or adventurous/risky aspects that sport can provide; (4) cognitive ability using leadership skills as well as appropriate strategies in sport competition; and (5) social approval participating in sport to please others. Factor weighings for these disabled athletes and for a comparison sample of adolescents who attended sport camps are given in Table 2.

Table 2. Comparison of Factor Weights for Achievement Orientations for Two Samples of Athletes

	Athletes from Sport Camps (n = 400)	Athletes from CP/LA Games (n = 150)
Social Approval		
Pleased people	.64	
Demonstrated importance	.46	
Made others happy	.73	
Others made me feel good	.65	.72
Others said I did well	.65	.54
Sport Mastery		
Reached a goal	.60	.49
Performance made me feel good	.65	.55
Met the challenge	.53	.64
Sport Venture		
Experienced adventure	.65	.91
Did something new and different	.57	.42
Completed something	.49	
Cognitive Ability		
Showed how smart I was	.33	.77
Showed I was a leader	.58	.44
Hard work paid off	.43	
Thought of needed strategy	.56	
Sport Competence		
Recognized as a good player	.42	.66
Demonstrated athletic skill	.38	.88

The achievement orientations for athletes in this study were similar to those for high school students and elite athletes reported by Ewing (1981). Virtually all of the athletes used all of the achievement orientations to some degree. In some sport organizations for disabled people, reinforcement consists primarily of social approval, regardless of performance outcome. Our findings indicate that there is little difference between the achievement goals of disabled and able-bodied athletes. Consequently, coaching strategies and the organization of sport programs for disabled persons should employ similar assumptions and rationales as in non-disabled sport.

Outcomes of Participation in the Games

Performance Outcomes. Performance outcomes were classified as objective or subjective outcomes. Objective outcomes were winning and losing, where winning was operationally defined as a 1st, 2nd, or 3rd place finish and losing as a 4th or greater place finish. Overall, 43% of the athletes in this study were winners in their events of interest.

Obviously, not every athlete can be a winner/medalist; however, most athletes are pleased or satisfied with some aspect of their performances even when they do not win. Examples of personal success might include performing well against an opponent of superior ability, achieving a personal best time or score, or selecting an effective strategy in a particular situation. In this study, 33% of the athletes were extremely satisfied, 55% were somewhat satisfied, and 12% were not at all satisfied with their performances. For purposes of subsequent data analyses, subjective outcomes were success and failure with success defined as a response at or above +1SD of the mean for satisfaction, and failure at or below -1SD for satisfaction.

Level of Stress Experienced, Athletes rated the amount of stress experienced at the Games on a 4-point rating scale. Results indicated that 25.17% of these athletes reported high levels of stress, 45.03% moderate stress, 19.87% little stress, and 9.93% no stress associated with their participation. The significant proportions of athletes who reported high and moderate levels of stress suggested that effective coping responses may be essential to continued participation in sport.

Responses to Participation Outcomes

Attributions to Performance Outcomes. Athletes in this study used each of the attributions from the After Performance Questionnaire. The variety of responses may have been greater had additional attributions been included in this questionnaire. Suggested additional attributions include officiating (some athletes felt they were unfairly classified for competition and others were not afforded adequate warm-up time), personal equipment (some owned top-of-the-line racing wheelchairs, while others used heavier, less mobile standard chairs), and athletic equipment (some athletes were required to compete using different equipment than used in training sessions).

Attributions did not differ for male and female athletes, $F(11,105)=1.51$, $p > .05$; however, MANOVA did reveal significant differences in use of attributions across competition classifications, $F(77,681)=1.35$, $p \angle .05$. Discriminant analysis revealed that this difference was due to differences in the responses of more severely disabled (Class 1, 2, and 6) and less severely disabled (Class 3, 4, 5, 7, and 8) athletes. More severely disabled athletes relied upon external explanations of performance more often than less disabled athletes.

Table 3 describes the attributions of these athletes to winning and losing (objective outcome) in competition. MANOVA results indicated significant differences between winners and losers, F (11,92)=2.82, $p \angle .01$. Although the one significant discriminant analysis function involved all eleven attributions (X^2 11=28.01, $p \angle 01$, working on skills and meeting the challenge were the most important variables in distinguishing winners from losers. Consistent with published literature, winners were more likely than losers to use internal attributions. Contrary to the literature, winners were also more likely to use external attributions.

Table 3. Means and Standard Deviations for Attributions to Objectively-Defined Winning and Losing

	Winners		Losers	
	(n = 45)		(n = 59)	
I was physically ready.	7.67	(1.98)	6.36	(2.56)
I was mentally ready.	7.36	(2.14)	6.86	(2.21)
I used the right strategy.	7.76	(1.94)	6.10	(2.58)
I was lucky.	4.33	(2.93)	3.69	(2.55)
I tried hard.	8.07	(1.54)	7.42	(2.35)
I performed well because of my ability.	7.62	(1.77)	5.93	(2.61)
I perform well in these situations.	7.31	(1.62)	6.00	(2.37)
I was able to meet the challenge.	7.91	(1.69)	5.93	(2.80)
I spent a lot of time working on my skills.	7.33	(2.47)	7.25	(2.34)
I enjoy competition.	8.62	(1.05)	8.05	(1.74)
I have special skills for this task.	7.44	(1.84)	6.07	(2.55)

Subjects responded to attributions using a 9-point Likert-type scale on which 1 corresponded to "Not at all a reason" and 9 corresponded to "Very much a reason."

Means and standard deviations for attributions to subjectively defined success and failure are presented in Table 4. Attributions were analyzed in an 8 (competition classification) x 4 (satisfied or unsatisfied winner or loser) MANOVA designed to determine the influence of perceived success or failure upon causal explanations of performance. The MANOVA for subjective outcome was significant F (33,152)=5.20, $p < .01$. Discriminant analysis revealed one significant function which differentiated satisfied winners and losers from dissatisfied winners and losers (X^2 (21)= 95.84, $p < .01$. Attributions which defined this function were meeting the challenge, trying hard, using the right strategy, being physically and mentally ready, ability, and performing well. Satisfied performers made more positive attributions to meeting the challenge, trying hard, and using the right strategy than dissatisfied performers.

Table 4. Means and Standard Deviations for Attributions to Subjectively-Defined Success and Failure

	Satisfied Winners		Satisfied Losers		Dissatisfied Winners		Dissatisfied Losers	
	(n = 26)		(n = 18)		(n = 2)		(n = 20)	
I was physically ready.	7.96	(1.82)	7.50	(1.72)	9.00	(0.00)	5.30	(3.08)
I was mentally ready.	7.31	(2.24)	7.89	(2.37)	8.00	(0.00)	6.55	(2.42)
I used the right strategy.	8.54	(0.81)	8.11	(2.05)	4.50	(4.95)	5.00	(2.47)
I was lucky.	4.54	(2.98)	3.78	(2.80)	3.50	(3.54)	3.10	(2.67)
I tried hard.	8.31	(1.35)	8.39	(1.65)	7.50	(0.71)	6.45	(2.80)
I performed well because of my ability.	7.69	(1.98)	7.89	(1.68)	7.50	(0.71)	3.70	(2.25)
I perform well in these situations.	7.27	(1.56)	7.78	(1.17)	8.00	(0.00)	4.50	(2.50)
I was able to meet the challenge.	8.23	(0.99)	8.17	(1.47)	5.00	(1.41)	3.95	(2.80)
I spent time working on my skills.	7.42	(2.61)	8.17	(1.50)	7.00	(1.41)	6.40	(2.72)
I enjoy competition.	8.42	(1.33)	8.67	(0.59)	9.00	(0.00)	7.35	(2.25)
I have special skills for this task.	7.50	(1.48)	6.94	(3.06)	8.00	(1.41)	5.65	(2.30)

Subjects responded to attributions using a 9-point Likert-type scale on which 1 corresponded to "Not at all a reason" and 9 corresponded to "Very much a reason."

The results of this investigation help to explain persistence in sport by disabled athletes. Earlier research indicated that persisters avoid making attributions to low ability when they lose or fail in competition. The athletes in this study, particularly the more disabled athletes, did avoid the internal low ability attribution when they were dissatisfied with their performances. These results imply that disabled athletes judge ability in terms of the capabilities of similarly disabled peers and that they recognize the contributions of other situational variables to performance.

Use of Coping Strategies.

Use of Coping Strategies. Athletes in this study used all of the coping strategies assessed by Lazurus and Folkman's (1985) Ways of Coping-Revised: confronting, escape-avoidance, accepting responsibility, self-controlling, seeking social support, problem solving, positive reappraisal, and distancing. Athletes rated their use of each strategy on a 4-point scale ranging from (0) does not apply to (3) used a great deal. The relative use of each strategy by low, fair, good, and high copers is described in Table 5. In general, those who cope more effectively with disability also employ various coping strategies more frequently in response to stress associated with competition. Overall, planful problem solving and positive reappraisal were used most often, with escape-avoidance and confronting used least often.

Interpretation of the coping strategy results should keep in mind that these results are characteristic of a group of moderately high copers. All of the coping strategies mentioned above were employed by these athletes to cope with dissatisfaction with performance, failure, and perceived stress associated with the Games. However, not all coping strategies were used equally. The coping strategies of problem solving and positive reappraisal were used most often by these athletes. These strategies are characterized by optimistic thought and intention. In planful problem solving, individuals engage in actions or thought directed toward the immediate situation or an anticipated situation. This direct problem-focused strategy would be a requisite for long-term coping in which the stressful situation must eventually be faced. In positive reappraisal, individuals emphasize or rationalize a perceived personal benefit or gain of participation irrespective of the objective outcome. This reframing is important for sustaining satisfying participation in competitive situation where only few individuals achieve the objective status of winner. Although coping strategies should not be perceived as good or bad, problem solving and positive reappraisal may represent more purposeful methods for coping with stressful situation, including stress associated with performance in sport.

Use of coping strategies by these athletes was dependent, in part, upon event outcome. A discriminant function analysis revealed that satisfied and dissatisfied performers differed in their use of strategies, X^2 (8)=21.02, $p \angle .01$. Dissatisfied performers were discriminated from satisfied and very satisfied performers by use of self-controlling, seeking social approval, accepting responsibility, and planful problem solving strategies. Specifically, dissatisfied athletes engaged in more accepting responsibility and seeking social support strategies. This function correctly classified 44.8% of the cases.

It was interesting to note that dissatisfied performers employed the strategies of accepting responsibility and seeking social support more often. In other words, these athletes lectured themselves, and made promises to themselves that things would be different next time (accepting responsibility) or talked to others about their performances and accepted, perhaps even sought, sympathy from others (social support). These

Table 5. Means and Standard Deviations for Use of Coping Strategies by Disability Coping Status Groups

	Disability Coping Status Groups				
Coping Strategies	Low Copers (n = 33)	Fair Copers (n = 43)	Good Copers (n = 56)	High Copers (n = 26)	Total (N = 158)
Confrontive Coping	0.94 (0.59)	0.92 (0.63)	1.09 (0.57)	1.13 (0.61)	1.02 (0.59)
Distancing	1.14 (0.47)	1.23 (0.56)	1.26 (0.63)	1.53 (0.60)	1.27 (0.58)
Self-Controlling	1.31 (0.55)	1.44 (0.45)	1.35 (0.64)	1.55 (0.73)	1.40 (0.60)
Seeking Social Support	1.23 (0.64)	1.36 (0.60)	1.45 (0.76)	1.55 (0.67)	1.40 (0.68)
Accepting Responsibility	1.16 (0.58)	1.26 (0.66)	1.26 (0.78)	1.62 (0.82)	1.30 (0.73)
Escape-Avoidance	0.74 (0.59)	0.81 (0.54)	0.72 (0.57)	0.94 (0.76)	0.78 (0.60)
Planful Problem Solving	1.60 (0.62)	1.70 (0.57)	1.86 (0.58)	1.97 (0.67)	1.78 (0.61)
Positive Reappraisal	1.36 (0.65)	1.51 (0.76)	1.70 (0.63)	1.79 (0.86)	1.60 (0.72)

strategies may be useful in the more immediate situation, but are not as purposeful in determining a course of action for the next experience. Satisfied performers employed a problem solving strategy, which may contribute to personal satisfaction with outcomes.

Objective outcome (winning/losing) also influenced use of coping strategies as revealed by a marginally significant discriminant function, X^2 (3)=7.16, $p \angle .10$. Winners used more planful problem solving strategies, while losers engaged in more escape-avoidance and positive reappraisal strategies. Even though marginally significant, the function correctly classified 55.7% of the athletes.

Of particular interest was the result that winners and losers coped with the event outcome differently. Winners engaged in planful problem solving, such as drawing on past experiences, to cope with their successes, whereas losers engaged in more often in escape-avoidance (e.g., wishing the situation had been different) and positive reappraisal. Research employing a longitudinal design is needed to understand if these are short-term coping strategies that are only employed initially after a disappointment. It may be that athletes who lose at a national competition employ different strategies to cope with the loss initially and then change to a more purposive strategy such as problem solving later in the process of coping.

A discriminant function analysis for stress experienced at the Games and use of coping strategies revealed a marginally significant finding, X^2 (3)=7.41, $p \angle .06$. Accepting responsibility was the only discriminating strategy. Those athletes who found the Games very stressful and not at all stressful used this strategy more than those who rated the stress of the Games as average or somewhat stressful.

Participation in a national sport competition can be stressful. How well athletes cope with both the stress related to competition and the stress of being in a strange environment waiting to perform may impact upon desire to compete at this higher level. Athletes who reported that the Games were either very stressful or not at all stressful employed a coping strategy of accepting responsibility more often than those who reported somewhat to average levels of stress. Although this result is incongruous with our expectations, the small number (n=9) who found the Games not at all stressful may have led to this distinction. More research is needed to understand this result.

Winners were defined as medalists in their events, namely, 1st, 2nd, or 3rd place finishers, and losers were operationally defined as non-medalist. Results of the discriminant function analyses were marginally significant, X^2 (3)=7.16, $p \angle 10$. Winners used more planful problem solving strategies, while losers engaged in more escape-avoidance and positive reappraisal strategies. Even though marginally significant, the function correctly classified 55.7% of the athletes.

Athletes were asked to rate the amount of stress experienced at the Games on 4-point Likert scale ranging from (1) very stressful to (4) not at all stressful. A discriminant function analysis revealed a marginally significant finding, X^2 (3)=7.41, $p \angle .06$. Accepting responsibility was the only discriminating strategy. Those athletes who found the Games very stressful and not at all stressful used this strategy more than those who rated the Games as average or somewhat stressful.

It was interesting to note that dissatisfied performers employed more accepting responsibility and seeking social support strategies. In other words, these athletes lectured themselves, and made promises to themselves that things would be different next time (accepting responsibility) or talked to others about their performances and accepted, perhaps even sought, sympathy from others (social support). These strategies may be useful in the more immediate situation, but are not as purposeful in determining a course of action for the next experience. Satisfied performers employed a problem solving strategy, which may relate to their being more satisfied.

Of particular interest was the result that winners and losers coped with the event outcome differently. Winners engaged in planful problem solving, such as drawing on past experiences, to explain their successes (a 1st, 2nd or 3rd place finish) whereas losers (4th place or greater finish) engaged in escape-avoidance (i.e., wishing the situation had been different) and positive reappraisal. More research is needed to understand if these are short-term coping strategies that are only employed initially after a disappointment. It may be that athletes who lose at a national competition employ different strategies to cope with the loss initially and then change to a more purposive strategy such as problem solving later.

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Interpretation of coping strategies should be kept in mind as characteristics of this group of moderately high copers. The results indicated that all of the coping strategies mentioned above were employed by these athletes to cope with dissatisfaction with performance, failure, and perceived stress associated with the Games. However, not all coping strategies were used equally. The coping strategies of problem solving and positive reappraisal were used most often by these athletes. These strategies are characterized by optimistic though and intention. In planful problem solving, individuals engage in actions or thought directed toward the immediate situation or an anticipated situation. This direct problem-focused strategy would be a requisite for long-term coping in which the stressful situation must eventually be faced. In positive reappraisal, individuals emphasize or rationalize a perceived personal benefit or gain of participation irrespective of the objective outcome. This reframing is important for sustaining satisfying participation in competitive situations where only a few individuals achieve the objective status of winner. Although coping strategies should not be perceived as good or bad, problem solving and positive reappraisal may represent more purposeful methods for coping with stressful situations, including stress associated with performance in sport.

Persistence in Sport. Athletes were asked to rate the likelihood that they would continue to participate in competitive sport (persistence) on a 4-point rating scale. Almost all (76%) athletes described themselves as very likely to continue. Only 3 individuals indicated that they would not continue to participate in sport. Although the distribution of athlete responses relative to persistence was significantly skewed in the direction of very likely to persist in sport, we were interested in determining which cognitive behaviors (coping with disability status, achievement orientations, coping strategies) are associated with persistence by disabled persons.

In a one-way ANOVA, no significant relationship was found between expectations to persist and coping with disability score, $F(3,148) = 0.47$, $p > .05$. Failure to detect a significant relationship may be due to the skewed distributions associated with both variables. Lack of significant results may also imply that disability-related coping is prerequisite to participation in sport, and that once an individual is involved in sport that use of situation-specific coping strategies may be more closely related to persistence.

Results of MANOVA indicated that high and low persisters do not differ in their use of achievement orientations F $(5,134)=1.30$, $p > .05$. The relationship of achievement orientations and persistence was not demonstrated in this study. However, these results are probably not an adequate test of the relationship based on the fact that this group of athletes were primarily characterized as persisters and no real comparison of non-persisters was used in this analysis. Further research is warranted to better examine the relationships between achievement orientations and persistence, as well as other psychological characteristics which may be more helpful in explaining persistence.

A MANOVA revealed that high and low persisters did differ with respect to use of coping strategies F $(8,150)=2.64$, $p < .01$. One significant discriminant analysis function differentiated high and low persisters on use of five of eight coping strategies. Persisters tended to use distancing, problem solving, and positive reappraisal more often than low persisters; whereas, low persisters tended to use confrontation and escape-avoidance.

As proposed, a link does exist between persistence in sport and coping strategies used by disabled athletes. Coping strategies found to be associated with persistence (i.e., problem solving, positive reappraisal, and distancing) represent an interesting combination of strategies that focus directly on the problem as well as on the associated affect. Problem solving emphasizes planful steps of action, positive reappraisal interprets data in ways that enhance personal growth, and distancing minimizes harmful or threatening interpretation of the data. Coping strategies that were associated with non-persistence (i.e., confrontation and escape-avoidance) are more challenging to understand. Escape-avoidance represents naive and distorting defenses that neither directly nor realistically address the problem or the associated affect. Confronting, as it is assessed in this instrument, consisted of expressing negative affect or risk taking that may not assist the person in effectively resolving the problem or associated affect that are necessary to enable persistence. These situation-specific strategies parallel previous findings about the characteristics of effective and ineffective coping and provide a preliminary basis to guide intervention strategies.

These results are exciting! If persistence in sport is consistently associated with use of certain strategies, then perhaps athletes can be taught to appraise the situation differently and to use coping strategies which are effective when coping with the challenges and outcomes of participation in sport.

Implications

Implications for athletes and coaches. The results concerning achievement orientations help us to understand what motivates athletes to compete. By knowing why an athlete participates in sport, the coach and athlete can work together to make practices more satisfying and successful. Realistic goals can be made that are in keeping with the desires of the athletes.

From previously published research on attributions by able-bodied athletes, we have learned that athletes who believe that they have demonstrated ability in competition are more likely to persist in sport than those who explain their performances using other attributions. Coaches can help by monitoring athletes' attributions and by helping athletes to recognize that poor performance is not always a result of low ability, but may be due to low effort or readiness to perform, or to external causes. For athletes to persist, they should avoid attributing a loss of poor performance to low ability.

Athletes should be encouraged to use constructive appraisals and coping strategies in response to stress associated with sport competition. Constructive strategies include problem solving, positive reappraisal, and distancing. Coaches can help athletes to learn about ways in which they work against themselves with ineffective coping strategies, and can also teach or model the use of effective strategies for coping with the inevitable losses or disappointments that occur when participating in challenging situations. Athletes who learn to use positive coping strategies in the context of sport may also benefit from use of these strategies in other achievement activities.

Implications for sport programs. From this study, we found that the achievement orientations of athletes with disabilities are similar to those previously found for able-bodied athletes. Five achievement goals were noted, namely social approval, sport mastery, sport venture, cognitive ability, and sport competence. This finding suggests that sport programs for disabled persons should be structured so that athletes with different achievement goals will be reinforced for attaining their goals in sport. Presently, some programs for disabled athletes stress reinforcement on the social approval level. These programs would be more responsive to athletes by providing support and recognition for athletes whose goals include skill mastery, demonstration of leadership skills, competition at elite levels, or adventure, in addition to rewarding athletes who seek the attention or approval of others.

A second implication for sport programs is the need for more intensive training programs in preparation for elite-level competition. Few athletes in this study trained on a daily basis. Additional training opportunities and facilities are clearly needed. Such training should include mental preparation for competition - learning to control anxiety, improving concentration skills, relaxation training, and using imagery to facilitate coping with anxiety and to enhance performance. In addition, consideration should be given to physical education or sport programs for disabled children and youth as a means of helping potential athletes to improve skill levels.

DISSEMINATION AND UTILIZATION

Athlete Report

The athlete report (see Attachment I) was written to provide athletes, coaches, Games officials, and colleagues with a general overview of the study and its results. This report was disseminated to participating athletes (n=197), coaches of participating athletes (n=100), the Games organizing committee (n=25), the National Consortium on Physical Education and Recreation for the Handicapped (n=200), the United States Olympic Committee (n=20), and professional colleagues and sport organizations.

Presentations

Five presentations have been made to professional organizations. Copies of manuscripts associated with four of these presentations are attached in the appendices to this report.

- The presentation made to the American Alliance for Health, Physical Education, Recreation and Dance focused on the influences of gender and competition classification on post-competition attributions; attributions to objectively defined winning and losing; and attributions to subjectively defined success and failure. The audience for this presentation consisted of about 50 specialists in adapted physical education (see Appendix J).

- The presentation made to the American Association for Counseling and Development focused on the interrelationships among achievement orientations, coping status with disability, coping strategies, and expectations to persist in sport. The audience for the presentation consisted of approximately 25 counselors, most of whom were employed within school systems (see Appendix I).

- The presentation made to the North American Society for the Psychology of Sport and Physical Activity focused on the post-competitive coping strategies of athletes with disabilities. The audience for the presentation consisted of approximately 50 sport psychologists (see Appendix K).

- The presentation made to the National Consortium on Physical Education and Recreation for the Handicapped (NCPERH) focused on the overall research results as presented in the athlete report. The NCPERH presentation was made to an audience of approximately 125 adapted physical education and therapeutic recreation specialists (see Appendix H).

- The presentation to the American Psychological Association (APA) focused on coping status with disability, coping strategies and their relationship to future expectations to persist in sport. The audience for the APA presentation included rehabilitation psychologists (see Appendix L).

Publications

Several manuscripts are being prepared for publication in professional journals. Two which have been submitted for review are:

Dummer, G.M., Ewing, M.E., Habeck, R.V., & Overton, S.R. (submitted). Attributions of Athletes with Cerebral Palsy to Success and Failure in Sports Competition. Adapted Physical Activity Quarterly.

Habeck, R.V., Ewing, M.E., Dummer, G.M., & Overton, S.R. (1986). Coping Strategies of Disabled Athletes. Manuscript submitted for publication.

FUTURE RESEARCH PLANS

Most research raises more questions than it answers, and this project was no exception. Questions of interest to rehabilitation psychology include the generalizability of coping behaviors in sport situations to other achievement domains (e.g., education, employment), ways to teach constructive coping skills to disabled persons who become frustrated or disappointed in their attempts to achieve, and the consistency of achievement orientations across different achievement domains. Sport psychology questions of interest include the development of psychological skills training programs for disabled athletes, consideration of attribution retraining as a method for preventing individuals from dropping out of sport participation, and development of coaching effectiveness programs. Considerations related to adapted physical education and recreation include the influence of physical education and sport programs for disabled children and youth upon sport participation during the adult years, as well as ways to improve accessibility and availability of physical education and sport programs for disabled persons of all ages.

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APPENDIX A: PERSONAL HISTORY QUESTIONNAIRE

ID= ___ ___ ___ (1-3)

HANDICAPPER ATHLETE STUDY
PERSONAL BACKGROUND QUESTIONNAIRE

Please provide your answer to each question. There are 30 questions, most of which requi you to fill in the blank or place a check in a box. You may ask for assistance in filling this out if you like as long as the answers are yours. Thank you for your time and assistance.

1. Name ____
Last Middle First

2. Address ____
No. and Street City State Zip

3. Phone No: _____/____________ 4. Sex: Female ☐ (4) 5. Age ________ (5)
Male ☐

6. What event(s) will you enter in the Games ____________________

DISABILITY HISTORY

7. How old were you when you acquired your disability? ______________ (6)
Years

8. Please check the box in front of any disability that you have:

☐ Cerebral Palsy ☐ Multiple Sclerosis ☐ Arthrogryposis (7-8)
☐ Short Stature ☐ Ehlers-Danlos Syndrome ☐ Muscular Dystrophy
☐ Osteogenisis Imperfecta ☐ Friedreich's Ataxia
☐ Organic Brain Syndrome ☐ Other ____________________

9. What is your functional classification level in the Games? __________ (9)

10. Please check the boxes which describe the amount of impairment you have in each of the following: (IMPMT = Impairment)

	NO IMPMT	MINOR IMPMT	MAJOR IMPMT	COMPLETE IMPMT	
☐ Endurance	☐	☐	☐	☐	(10)
☐ Coordination	☐	☐	☐	☐	(11)
☐ Vision	☐	☐	☐	☐	(12)
☐ Hearing	☐	☐	☐	☐	(13)
☐ Mobility	☐	☐	☐	☐	(14)

	NO IMPMT	MINOR IMPMT	MAJOR IMPMT	COMPLETE IMPMT	
☐ Self Care	☐	☐	☐	☐	(15)
☐ Speech	☐	☐	☐	☐	(16)

11. Please check the number which best describes your disability:

☐ 1	☐ 2	☐ 3	☐ 4	☐ 5 (17)
Stable or stays the same		Moderately Stable		Unstable or changes often

12. Please check off the number that best describes the physical consequences of your disability:

☐ 1	☐ 2	☐ 3	☐ 4	☐ 5 (18)
Progressive				Non-progressive

SPORT HISTORY

13. What type of training (practice schedule) did you have in training for your event?

☐ No training ☐ Whenever I could, but no formal schedule (19)

☐ Organized training schedule

14. What type of assistance did you have in training for your event? (20)

☐ No assistance, I trained on my own

☐ Some assistance (friend, relative), but no formal coach

☐ Had a coach

15. How often did you train for your event? (Check the box best describing your schedule.)

☐ Daily; number of times per day ________________ (21-22)

☐ Weekly; number of times per week ___________________ (23-24)

☐ Monthly; number of times per month ___________________ (25-26)

☐ Less than once per month

16. When you train, how long does an average session usually last? (Check the best estimate.)

☐ Less than 15 minutes

☐ 15 to 30 minutes

☐ 30 minutes to 1 hour

☐ More than 1 hour (27)

17. Have you competed before in a sports event? ☐ NO ☐ YES (28)

If Yes:

a. At what levels have you competed? ☐ Local ☐ State

☐ Regional ☐ National (29)

b. How many times have you competed in sports levels checked above?

☐ Once ☐ 1 to 5 times ☐ More than 5 times (30)

c. Has this competition ever been against able-bodied athletes or always in specialty meets?

☐ Always in specialty meets ☐ Against able bodied athletes (31)

18. Do you have an opportunity to train with able bodied athletes?

☐ YES ☐ NO (32)

19. How often are accessbile training and competitive facilities available for your participation in sport? (33)

☐ Never ☐ Occasionally ☐ Regularly

20. Does accessibility of a facility affect your choice of event? (34)

☐ YES ☐ NO

21. What was the main reason you got involved in competitive sport? __________

____

____

22. How long have you been involved in competitive sport? (35-36)

☐ Number of Years ☐ Number of months

23. How long have you been involved in the event in which you will compete at the Games? (37-38)

☐ Number of years ☐ Number of months

24. How important would you say this involvement in sport is to you? (39)

☐ Not important ☐ Somewhat important ☐ Very important ☐ Most important

25. How would you rate your ability in sport? (40)

☐ 1 The Best ☐ 2 Very Good ☐ 3 Average ☐ 4 Poor

26. How would you rate your ability in your chosen event? (41)

☐ 1 The Best ☐ 2 Very Good ☐ 3 Average ☐ 4 Poor

27. Are you currently employed? (42)

Yes I am employed - - - - - - ☐ Full Time ☐ Part Time
I am in school - - - - - - - ☐ Full Time ☐ Part Time
I am not employed or in school ☐

28. Education Completed: (Check One) ☐ Elementary ☐ Junior High (43)

☐ Some (1-3) High School ☐ Some (1-3) Vocational School

☐ High School Graduate ☐ Some (1-3) College ☐ College Graduate

☐ Graduate Education

29. Current Marital Status: (Check One) (44)

☐ Married ☐ Never Married ☐ Single/Widowed

☐ Single: Never Married ☐ Divorced

30. Current Living Status: (45)

☐ Alone

☐ With one or more adults (related or significant other)

☐ with child(ren) and no adults

☐ With assistance from hired attendant or other personal care provider

1(80)

APPENDIX B: ACHIEVEMENT ORIENTATION QUESTIONNAIRE

ACHIEVEMENT QUESTIONNAIRE

Your continued participation in this research project is greatly appreciated. In the following questions, I am interested in gaining a better understanding of what athletes feel is important. In trying to do this I will be asking you to think about those experiences that you feel good about. What do you consider your successes? Then, I will ask you to think about those experiences that you do not feel good about. What do you consider your failures? Remember, I am interested in your thoughts, not someone elses.

But first, to help you understand the task, I would like to give you two examples. Below are two stories of handicapper athletes, one a woman and one a man. In no way are these EXAMPLES typical. Rather , they are intended to help you think about your own life.

June Goodman is a thirty year old handicapper who considers herself to be a pretty good athlete. While June was in training , she met her good friend Amy. Amy and June became friends and decided to work together on a short story about their experiences as handicappers. It won the Creative Writing Prize and both June and Amy really felt good about it.. Recently June began to take classes in swimming and she is supposed to swim a half mile per day as part of her class routine. June thinks swimming is a boring sport and has cheated in telling her teacher about the number of miles that she swims in a week.

June is interested in computers and she thought of joining a group of handicappers that she knew were in a local computer club. She reasoned that this would allow her to meet other handicappers. She did not join because she was worried about her shyness getting in the way . Instead she joined a church group where she is learning to work with her shyness in a more supportive atmosphere.

June is often lonely because she hasn't met the same kind of friends that she once had in college. At home June used to cook alot with her roommate and she also used to have good talks with her roommate. Recently, though, they have been arguing alot for no apparent reason.

In her free time, June often sits on the front steps writing poetry. Sometimes when younger children in the neighborhood come to hang out at her house, she teaches them the words of her poems. She dreams of being a famous poet and of marrying the man next door.

Do some of June's experiences remind you of experiences in your own life? Remember that the story above doesn't tell all there is to tell about June. The following are what June might list as some of her most memorable successes and failures.

Three successes that June might list are:

Winning the Creative Writing Prize with my friend Amy
Joining the Church group to work on my shyness
Teaching the children in the neighborhood about poetry

Three failures that June might list are:

Arguing with her roommate
Cheating in her swimming class
Not joining the computer club due to her shyness

The next story is about a man. Please read it slowly and thoughtfully.

Lenny Willard is a thirty five year old man. Lenny is a state employee and works with other handicappers helping them resolve problems that come up for them while employed by the State. Lenny worked long and hard to obtain his current position and he is proud of his job. Lenny is a friendly man and is well liked by most of his colleagues. Recently Lenny began to get serious about sports and he plans to compete in the National Games for Cerebral Palsied athletes.

Lenny lives alone and is divorced. Lenny has had a difficult time meeting and dating new women so he spends most of his time working. Lenny comes from a big family and he sees his family often for dinners and weekend outings. Lenny has an older sister that he cannot get along with , though he tries to talk to her as often as he can. Lenny sometimes wonders if it is something about him that has caused these two important relationships in his life to fail. It is difficult for him to understand why he is having difficulty in his personal life , when he is so well liked by his colleagues. When Lenny was married he remembers being asked by his wife to spend more time at home and less time at work.

Lenny likes to work on his home computer in his free time and he especially likes to play video games. Lenny's dream is to someday have a family and work together with his new wife and children to build a cabin in the mountains.

Do some of the experiences in Lenny's life remind you of experiences in your own life? The following are what Lenny might list as some of his most memorable successes and failures.

Three successes that Lenny might list are:

Obtaining my job with the State
Working with handicappers to resolve problems for them
Considered a good employee and well liked by colleagues

Three failures that Lenny might list are:

(Failures)

My divorce with my wife
My lack of communication with my sister
Focusing too much on my work life

The following questions will invite _you_ to think about your life and your own experiences. Then I will ask you to list some of your successes and failures _in sport_.

ID #_____________(1-3)

ACHIEVEMENT QUESTIONNAIRE

NAME____

DIRECTIONS

We are interested in learning more about what people think is important in competitive sports. In order to understand what you think is important, we will be asking you to think about those experiences in sport that you felt good about. We would like to know what it was that made you feel good about the experience.

We are most interested in what you, not your coaches, friends, or parents, think. In order to identify these experiences and what it was that made you feel good, we ask that you take a little time to think about your responses.

Remember, there are no RIGHT or WRONG answers.

For the following situation, think about an experience you've had in which you felt successful, or felt good about what you did. Briefly describe the experience on the lines provided and then answer the questions that follow the experience. You may need to take a few minutes to think about those experiences you have had before describing one. Take your time. You may have someone assist you if you like.

Briefly describe a competitive sport experience in which you felt successful.

____

____

____

____

____

____

Now answer the questions on the next two pages, while you keep this experience in mind.

A. What were the things that made you feel successful? For each statement below, check the box in front of the number representing the amount you agree or disagree with each statement.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree

I FELT SUCCESSFUL BECAUSE:

1. I pleased people important to me. ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 (4)
2. I did something few other people did. ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 (5)
3. I demonstrated my importance to others. ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 (6)
4. I showed how smart I was. ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 (7)
5. I did it on my own. ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 (8)
6. I experienced adventure. ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 (9)
7. I did something new and different. ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 (10)
8. I was recognized as a good player. ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 (11)
9. I showed I was a leader. ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 (12)
10. I made other people happy. ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 (13)
11. I understood something important to me. ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 (14)
12. I completed something. ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 (15)
13. Other people made me feel good. ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 (16)
14. I reached a goal. ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 (17)
15. My performance made me feel good. ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 (18)
16. I met the challenge. ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 (19)
17. Other people told me I did well. ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 (20)
18. I demonstrated my athletic skills. ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 (21)
19. My hard work (practice) paid off. ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 (22)
20. I was able to think through the needed strategy. ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 (23)
21. Other (specify) ____________________ ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 (24)

B. Now think about the success again. I would like you to think about WHY you were successful. Check the box before the number representing the degree to which you agree or disagree with the following:

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree Nor Disagree	Agree	Strongly Agree

I WAS SUCCESSFUL BECAUSE:

1. I used the right strategy.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	(25)
2. I knew the right people.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	(26)
3. I have a lot of friends.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	(27)
4. I tried hard.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	(28)
5. I have special skills for this task.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	(29)
6. I was lucky.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	(30)
7. I perform well in these situations.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	(31)
8. I was able to meet the challenge.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	(32)
9. I enjoy sport experiences.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	(33)
10. I spent a lot of time working on it.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	(34)
11. I am good at sport skills.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	(35)
12. I am capable.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	(36)
13. Other (specify)____________________	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	(37)

2(80)

APPENDIX C: COPING WITH DISABILITY INVENTORY

ID #____ ____ ____ (1-3)

COPING WITH DISABILITY INVENTORY

Directions: Rate each of the following statements in one of the column on the right side of the page that best describes your preference or leanings. Answer according to your present situation (current feelings).

	Never/ Rarely 1	Seldom 2	Some-times 3	Often/ Frequent 4	Almost Always 5	
I obtain information about my body in relation to my disability.	☐	☐	☐	☐	☐	(4)
I am involved in social, political and/or non-work activities.	☐	☐	☐	☐	☐	(5)
I am aware of my personal needs and concerns.	☐	☐	☐	☐	☐	(6)
As a result of my disability, I tend to view life as having both meaning and purpose.	☐	☐	☐	☐	☐	(7)
I think about my disability.	☐	☐	☐	☐	☐	(8)
I find different things to do during my free time.	☐	☐	☐	☐	☐	(9)
I am able to express anger.	☐	☐	☐	☐	☐	(10)
I let go of activities and personal goals that are not realizable due to my disability.	☐	☐	☐	☐	☐	(11)
I can tolerate anger directed towards me.	☐	☐	☐	☐	☐	(12)
I feel like a victim of fate or misfortune because of my disability.	☐	☐	☐	☐	☐	(13)
I have close love relationships.	☐	☐	☐	☐	☐	(14)
I experience emotional stress.	☐	☐	☐	☐	☐	(15)
I hold on to my opinions even though others may not agree.	☐	☐	☐	☐	☐	(16)

	Never/ Rarely 1	Seldom 2	Some-times 3	Often/ Frequent 4	Almost Always 5	
I consider my disability an inconvenience.	☐	☐	☐	☐	☐	(17)
I feel that I have to be on my guard in interaction with others.	☐	☐	☐	☐	☐	(18)
I help and encourage others.	☐	☐	☐	☐	☐	(19)
I use fantasy and imagination to develop options and opportunities in my life.	☐	☐	☐	☐	☐	(20)
I am optimistic and hopeful about my life.	☐	☐	☐	☐	☐	(21)
I participate in social organizations.	☐	☐	☐	☐	☐	(22)
I am involved in removing disability barriers & prejudice.	☐	☐	☐	☐	☐	(23)
I enjoy life.	☐	☐	☐	☐	☐	(24)
I am able to handle frustrating experiences.	☐	☐	☐	☐	☐	(25)
I am able to obtain material comforts.	☐	☐	☐	☐	☐	(26)
I have a positive opinion of myself.	☐	☐	☐	☐	☐	(27)
I accept that my body looks and functions differently from others.	☐	☐	☐	☐	☐	(28)
I desire relationships that include intimacy and trust.	☐	☐	☐	☐	☐	(29)
I pay close attention to my body.	☐	☐	☐	☐	☐	(30)
I cannot stand ambiguity or uncertainty.	☐	☐	☐	☐	☐	(31)
I can point to real achievements in my life.	☐	☐	☐	☐	☐	(32)

	Never/ Rarely 1	Seldom 2	Some-times 3	Often/ Frequent 4	Almost Always 5	
I think of my disabilities as the worst thing that has happened to me.	☐	☐	☐	☐	☐	(33)
I see myself as no longer disabled in my day dreams.	☐	☐	☐	☐	☐	(34)
I think that my disability has advantages.	☐	☐	☐	☐	☐	(35)
I feel comfortable with looking at myself in the mirror.	☐	☐	☐	☐	☐	(36)
I care for the people and things in my life.	☐	☐	☐	☐	☐	(37)
I am aware of the difference between loving someone and needing someone's love.	☐	☐	☐	☐	☐	(38)
I am comfortable when others do not accept my beliefs.	☐	☐	☐	☐	☐	(39)
I am satisfied with myself even though I may be unemployed.	☐	☐	☐	☐	☐	(40)
I live in the "here and now" rather than in the past.	☐	☐	☐	☐	☐	(41)
I can accept compliments and recognition from other people.	☐	☐	☐	☐	☐	(42)
I think my life is challenging and exciting.	☐	☐	☐	☐	☐	(43)
I perceive problems as opportunities for growth.	☐	☐	☐	☐	☐	(44)
I am responsible for making other people happy.	☐	☐	☐	☐	☐	(45)
I like myself and can accept my "failings."	☐	☐	☐	☐	☐	(46)
I seek and obtain specific information to solve problems.	☐	☐	☐	☐	☐	(47)
I base my decision on my future goals.	☐	☐	☐	☐	☐	(48)

	Never/ Rarely 1	Seldom 2	Some-times 3	Often/ Frequent 4	Almost Always 5	
I feel comfortable about asking others for support and assistance.	☐	☐	☐	☐	☐	(49)
I have problems in communicating with others.	☐	☐	☐	☐	☐	(50)
I am willing to take calculated risks.	☐	☐	☐	☐	☐	(51)
I initiate interactions with others.	☐	☐	☐	☐	☐	(52)
I see opportunities in my life as limited.	☐	☐	☐	☐	☐	(53)
I use professional assistance when needed.	☐	☐	☐	☐	☐	(54)
I reflect before and after my actions.	☐	☐	☐	☐	☐	(55)
I make efforts to overcome and solve my problems.	☐	☐	☐	☐	☐	(56)
I am positively influenced by persons apart from my family.	☐	☐	☐	☐	☐	(57)
I can laugh at myself and with others about life happenings that are connected with my disability	☐	☐	☐	☐	☐	(58)
I am cautious in my behavior	☐	☐	☐	☐	☐	(59)
I seek advice from other disabled persons.	☐	☐	☐	☐	☐	(60)
I find myself complying to the expectations of others.	☐	☐	☐	☐	☐	(61)
I back away from difficult situations.	☐	☐	☐	☐	☐	(62)
I like receiving compliments and recognition from other people.	☐	☐	☐	☐	☐	(63)
I understand the nonverbal messages of others towards me.	☐	☐	☐	☐	☐	(64)

	Never/ Rarely 1	Seldom 2	Some- times 3	Often/ Frequent 4	Almost Always 5	
I examine alternative solutions to problems.	☐	☐	☐	☐	☐	(65)
I feel helpless in dealing with my disability.	☐	☐	☐	☐	☐	(66)
I use self-control in expressing my feelings.	☐	☐	☐	☐	☐	(67)
I attribute my disability to fate.	☐	☐	☐	☐	☐	(68)
I display my emotional reactions to stressful situations.	☐	☐	☐	☐	☐	(69)
I try to influence the direction of events toward personally determined goals.	☐	☐	☐	☐	☐	(70)
I mentally rehearse responses to events that will or might happen.	☐	☐	☐	☐	☐	(71)
I consider myself to be the source of control over events in my life.	☐	☐	☐	☐	☐	(72)
I experiment with different ways of dealing with disability-related problems.	☐	☐	☐	☐	☐	(73)
I evaluate my behavior by my own internal standards.	☐	☐	☐	☐	☐	(74)
I try to focus on other areas of my life that are more rewarding when I am troubled by my life.	☐	☐	☐	☐	☐	(75)
I experience sadness.	☐	☐	☐	☐	☐	(76)
I experience fear.	☐	☐	☐	☐	☐	(77)
I am alert to changes in my body that may affect my health.	☐	☐	☐	☐	☐	(78)
I give myself presents, treats or nurture myself in other ways.	☐	☐	☐	☐	☐	(79)

	Never/ Rarely 1	Seldom 2	Some- times 3	Often/ Frequent 4	Almost Always 5	
I take responsibility for a problem rather than blaming myself for it.	☐	☐	☐	☐	☐	(80)
I experience grief in relation to my disability.	☐	☐	☐	☐	☐	(81)
I look forward to the future as an opportunity for further growth.	☐	☐	☐	☐	☐	(82)
I perceive problems as opportunities for growth.	☐	☐	☐	☐	☐	(83)

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Michigan State University

3(80)

APPENDIX D: PERFORMANCE EXPECTATION QUESTIONNAIRE

ID #____ ____ ____ (1-3)

DATA COLLECTION ASSISTANT #____ ____ ____ (4-6)

BEFORE PERFORMANCE QUESTIONNAIRE

Event______________________________________ (7)

1. How do you rate your ability to perform generally?

1	2	3	4	5	6	7	8	9	(8)
Terrible	Very Good	Poor	A Little Above Average	Average	A Little Below Average	Good	Very Poor	Excellent	

2. How do you rate your ability to perform today?

9	8	7	6	5	4	3	2	1	(9)
Excellent	Very Good	Good	A Little Above Average	Average	A little Below Average	Poor	Very Poor	Terrible	

3. What score, time or performance rating do you expect to have in today's event? ______________________________________ (10)

4. How confident are you that you will achieve that score, time or performance rating today?

1	2	3	4	5	6	7	8	9	10	
10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	(11)

5. How well do you think you will do compared to the other athletes in today's events?

5	4	3	2	1	
Worse Than Most Athletes	Better Than The Worst Athlete	As Good As The Average Athlete	Better Than The Average Athlete	Better Than Most Athletes	(12)

6. How confident are you that you will win today?

1	2	3	4	5	6	7	8	9	10	
10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	(13)

7. What is the best score, time performance you have had in this event?

__________________________ (14)

6 (80)

ID #____ ____ ____ (1-3) EVENT ____________ (4)

DATA COLLECTION ASSISTANT ____ ____ ____ (5-6) SEX __________ (7)

BEFORE PERFORMANCE FEELINGS AND EMOTIONS

Directions A number of statements which athletes have used to describe their feelings before competition are given below. Read each statement and then mark the box before the appropriate number to indicate how you feel right now - at this moment. There are no right or wrong answers. Do NOT spend too much time on any one statement, but choose the answer which describes your feelings**right now**.

	Not At All	Somewhat	Moderately So	Very Much So	
1. I am concerned about this competition.	☐ 1	☐ 2	☐ 3	☐ 4	(8)
2. I feel nervous.	☐ 1	☐ 2	☐ 3	☐ 4	(9)
3. I feel at ease.	☐ 1	☐ 2	☐ 3	☐ 4	(10)
4. I have self-doubts.	☐ 1	☐ 2	☐ 3	☐ 4	(11)
5. I feel jittery.	☐ 1	☐ 2	☐ 3	☐ 4	(12)
6. I feel comfortable.	☐ 1	☐ 2	☐ 3	☐ 4	(13)
7. I am concerned that I may not do as well in this competition as I could.	☐ 1	☐ 2	☐ 3	☐ 4	(14)
8. My body feels tense.	☐ 1	☐ 2	☐ 3	☐ 4	(15)
9. I feel self-confident.	☐ 1	☐ 2	☐ 3	☐ 4	(16)
10. I am concerned about losing.	☐ 1	☐ 2	☐ 3	☐ 4	(17)
11. I feel tense in my stomach.	☐ 1	☐ 2	☐ 3	☐ 4	(18)
12. I feel secure.	☐ 1	☐ 2	☐ 3	☐ 4	(19)
13. I am concerned about choking under pressure.	☐ 1	☐ 2	☐ 3	☐ 4	(20)
14. My body feels relaxed.	☐ 1	☐ 2	☐ 3	☐ 4	(21)
15. I'm confident I can meet the challenge.	☐ 1	☐ 2	☐ 3	☐ 4	(22)
16. I'm concerned about performing poorly.	☐ 1	☐ 2	☐ 3	☐ 4	(23)

	Not At All	Somewhat	Moderately So	Very Much So	
17. My heart is racing.	☐ 1	☐ 2	☐ 3	☐ 4	(24)
18. I'm confident about performing well.	☐ 1	☐ 2	☐ 3	☐ 4	(25)
19. I'm worried about reaching my goal.	☐ 1	☐ 2	☐ 3	☐ 4	(26)

7(80)

APPENDIX E: AFTER PERFORMANCE QUESTIONNAIRE

ID #____ ____ ____ (1-3)

DATA COLLECTION ASSISTANCE ____ ____ ____ (4-6)

AFTER PERFORMANCE QUESTIONNAIRE II

PLACEMENT (1st, 2nd, etc.) ______________________________ (7)

EVENT ____________________________________ (8)

PERFORMANCE SCORE ________________________ (9)

DIRECTIONS I would like you to think about your performance and why you were successful or unsuccessful. Please check the box in front of a response for each of the reasons listed below. Remember there are no right or wrong answers. Each of the reasons may or may not be a reason for your performance today. Please rate each reason on the 9-point scale.

A. PERSONAL PERFORMANCE

1. How satisfied were you with your performance?

☐ 9 ☐ 8 ☐ 7 ☐ 6 ☐ 5 ☐ 4 ☐ 3 ☐ 2 ☐ 1 (10)

Extremely Satisfied	Somewhat Satisfied	Not At All Satisfied

2. How would you rate your performance tonight?

☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7	☐ 8	☐ 9	(11)
Worst Game	Way Below Average	Below Average	A Little Below Average	Average	A Little Above Average	Above Average	Way Above Average	Reached My Potential	

Each of the factors listed below may be an explanation for your performance tonight. Please rate each reason on the 9-point scale.

	Not At All A Reason				Somewhat A Reason				Very Much A Reason	
I was physically ready.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7	☐ 8	☐ 9	(12)
I was mentally ready.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7	☐ 8	☐ 9	(13)
I used the right strategy.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7	☐ 8	☐ 9	(14)

	Not At All A Reason				Somewhat A Reason				Very Much A Reason	
I was lucky.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7	☐ 8	☐ 9	(15)
I tried hard.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7	☐ 8	☐ 9	(16)
I performed well because of my ability.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7	☐ 8	☐ 9	(17)
I perform well in these situations.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7	☐ 8	☐ 8	(18)
I was able to meet the challenge.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7	☐ 8	☐ 9	(19)
I spent a lot of time working on my skills.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7	☐ 8	☐ 9	(20)
I enjoy competition.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7	☐ 8	☐ 9	(21)
I have special skills for this task.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7	☐ 8	☐ 9	(22)

9 (80)

ID #____ ____ ____ (26-27)

DATA COLLECTION ASSISTANT ____ ____ ____ (28-29)

AFTER PERFORMANCE QUESTIONNAIRE I

15. How well were you able to concentrate on your performance today?

☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7	☐ 8	☐ 9	(23)
Not At All							Total Concentrate		

16. Based on your performance tonight, how well do you think you will perform next time?

☐ 9	☐ 8	☐ 7	☐ 6	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1	(24)
Reach My Potential	Way Above Average	Above Average	A Little Above Average	Average	A Little Below Average	Below Average	Way Below Average	Worst Game Played	

17. How confident are you that you will perform up to your potential next time?

☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7	☐ 8	☐ 9	☐ 10	(25)
10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	

8 (80)

APPENDIX F: PERSISTENCE EXPECTATION QUESTIONNAIRE

ID #______ ______ ______

DATA COLLECTION ASSISTANT ______ ______ ______

Please check the box that best represents your viewpoint.

1. How stressful was your total experience in competition at the Games?

Very	Average	Somewhat	Not At All
1 ☐	2 ☐	3 ☐	4 ☐

2. How challenging were the Games for you?

Very	Average	Somewhat	Not At All
1 ☐	2 ☐	3 ☐	4 ☐

3. Based on your experience here at the Games, how likely are you to continue your participation in competitive sport?

Very	Average	Somewhat	Not At All
1 ☐	2 ☐	3 ☐	4 ☐

4. How confident are you that you will participate in competitive sport again?

Very	Average	Somewhat	Not At All
1 ☐	2 ☐	3 ☐	4 ☐

5. Is the event at which you were tested your best event?

   ☐ YES ☐ NO

6. Is the event at which you were tested your most valued event?

   ☐ YES ☐ NO

7. How many times have you competed in national competition (including the 1985 National Cerebral Palsy/Les Autres Games)? ______ Times

8. How many times have you competed in international competition? ______ Times

APPENDIX G: WAYS OF COPING - REVISED

ID #___ ___ ___ (1-3)

DATA COLLECTION ASSISTANT #___ ___ __ (4-6)

COPING STRATEGY QUESTIONNAIRE

Performance in a competitive sport event is sometimes a stressful experience. We want to understand how athletes cope with their performance after it is over. Below is a list of strategies people might use to cope with stressful events.

Please read each item below and indicate, by checking the appropriate box, to what extent you used it in dealing with your performance.

	Not Used	Used Somewhat	Used Quite A Bit	Used A Great Deal	
1. Just concentrated on what I had to do next - the next step.	☐ 0	☐ 1	☐ 2	☐ 3	(7)
2. I tried to analyze the problem in order to understand it better.	☐ 0	☐ 1	☐ 2	☐ 3	(8)
3. Turned to work or substitute activity to take my mind off things.	☐ 0	☐ 1	☐ 2	☐ 3	(9)
4. I felt that time would make a difference - the only thing to do was to wait.	☐ 0	☐ 1	☐ 2	☐ 3	(10)
5. Bargained or compromised to get something positive from the situation.	☐ 0	☐ 1	☐ 2	☐ 3	(11)
6. I did something which I didn't think would work, but at least I was doing something.	☐ 0	☐ 1	☐ 2	☐ 3	(12)
7. Tried to get the person responsible to change his or her mind.	☐ 0	☐ 1	☐ 2	☐ 3	(13)
8. Talked to someone to find out more about the situation.	☐ 0	☐ 1	☐ 2	☐ 3	(14)
9. Criticized or lectured myself.	☐ 0	☐ 1	☐ 2	☐ 3	(15)
10. Tried not to burn my bridges but leave things open somewhat.	☐ 0	☐ 1	☐ 2	☐ 3	(16)

	Not Used	Used Somewhat	Used Quite A Bit	Used A Great Deal	
11. Hoped a miracle would happen.	☐ 0	☐ 1	☐ 2	☐ 3	(17)
12. Went along with fate; sometimes I just have bad luck.	☐ 0	☐ 1	☐ 2	☐ 3	(18)
13. Went on as it nothing had happened.	☐ 0	☐ 1	☐ 2	☐ 3	(19)
14. I tried to keep my feelings to myself.	☐ 0	☐ 1	☐ 2	☐ 3	(20)
15. Looked for the silver lining, so to speak; tried to look on the bright side of things.	☐ 0	☐ 1	☐ 2	☐ 3	(21)
16. Slept more than usual.	☐ 0	☐ 1	☐ 2	☐ 3	(22)
17. I expressed anger to the person(s) who caused the problem.	☐ 0	☐ 1	☐ 2	☐ 3	(23)
18. Accepted sympathy and understanding from someone.	☐ 0	☐ 1	☐ 2	☐ 3	(24)
19. I told myself things that helped me to feel better.	☐ 0	☐ 1	☐ 2	☐ 3	(25)
20. I was inspired to do something creative.	☐ 0	☐ 1	☐ 2	☐ 3	(26)
21. Tried to forget the whole thing.	☐ 0	☐ 1	☐ 2	☐ 3	(27)
22. I got professional help.	☐ 0	☐ 1	☐ 2	☐ 3	(28)
23. Changed or grew as a person in a good way.	☐ 0	☐ 1	☐ 2	☐ 3	(29)
24. I waited to see what would happen before doing anything.	☐ 0	☐ 1	☐ 2	☐ 3	(30)
25. I apologized or did something to make up.	☐ 0	☐ 1	☐ 2	☐ 3	(31)

	Not Used	Used Somewhat	Used Quite A Bit	Used A Great Deal	
26. I made a plan of action and followed it.	☐ 0	☐ 1	☐ 2	☐ 3	(32)
27. I accepted the next best thing to what I wanted.	☐ 0	☐ 1	☐ 2	☐ 3	(33)
28. I let my feelings out somehow.	☐ 0	☐ 1	☐ 2	☐ 3	(34)
29. Realized I brought the problem on myself.	☐ 0	☐ 1	☐ 2	☐ 3	(35)
30. I came out of the experience better than when I went in.	☐ 0	☐ 1	☐ 2	☐ 4	(36)
31. Talked to someone who could do something concrete about the problem.	☐ 0	☐ 1	☐ 2	☐ 3	(37)
32. Got away from it for a while; tried to rest or take a vacation.	☐ 0	☐ 1	☐ 2	☐ 3	(38)
33. Tried to make myself feel better by eating, drinking, smoking, using drugs or medication, etc.	☐ 0	☐ 1	☐ 2	☐ 3	(39)
34. Took a big chance or did something very risky.	☐ 0	☐ 1	☐ 2	☐ 3	(40)
35. I tried not to act too hastily or follow my first hunch.	☐ 0	☐ 1	☐ 2	☐ 3	(41)
36. Found a new faith.	☐ 0	☐ 1	☐ 2	☐ 3	(42)
37. Maintained my pride and kept a stiff upper lip.	☐ 0	☐ 1	☐ 2	☐ 3	(43)
38. Rediscovered what is important in life.	☐ 0	☐ 1	☐ 2	☐ 3	(44)
39. Changed something so things would turn out all right.	☐ 0	☐ 1	☐ 2	☐ 3	(45)
40. Avoided being with people in general.	☐ 0	☐ 1	☐ 2	☐ 3	(46)

	Not Used	Used Somewhat	Used Quite A Bit	Used A Great Deal	
41. Didn't let it get to me; refused to think too much about it.	☐ 0	☐ 1	☐ 2	☐ 3	(47)
42. I asked a relative or friend I respected for advice.	☐ 0	☐ 1	☐ 2	☐ 3	(48)
43. Kept others from knowing how bad things were.	☐ 0	☐ 1	☐ 2	☐ 3	(49)
44. Made light of the situation; refused to get too serious about it.	☐ 0	☐ 1	☐ 2	☐ 3	(50)
45. Talked to someone about how I was feeling.	☐ 0	☐ 1	☐ 2	☐ 3	(51)
46. Stood my ground and fought for what I wanted.	☐ 0	☐ 1	☐ 2	☐ 3	(52)
47. Took it out on other people.	☐ 0	☐ 1	☐ 2	☐ 3	(53)
48. Drew on my past experiences I was in a similar situation before.	☐ 0	☐ 1	☐ 2	☐ 3	(54)
49. I know what had to be done, so I doubled my efforts to make things work.	☐ 0	☐ 1	☐ 2	☐ 3	(55)
50. Refused to believe that it had happened.	☐ 0	☐ 1	☐ 2	☐ 3	(56)
51. I made a promise to myself that things would be different next time.	☐ 0	☐ 1	☐ 2	☐ 3	(57)
52. Came up with a couple of different solutions to the problem.	☐ 0	☐ 1	☐ 2	☐ 3	(58)
53. Accepted it, since nothing could be done.	☐ 0	☐ 1	☐ 2	☐ 3	(59)
54. I tried to keep my feelings from interfering with other things too much.	☐ 0	☐ 1	☐ 2	☐ 3	(60)

	Not Used	Used Somewhat	Used Quite A Bit	Used A Great Deal	
55. Wished that I could change what had happened or how I felt.	☐ 0	☐ 1	☐ 2	☐ 3	(61)
56. I changed something about myself.	☐ 0	☐ 1	☐ 2	☐ 3	(62)
57. I daydreamed or imagined a better time or place than the one I was in.	☐ 0	☐ 1	☐ 2	☐ 3	(63)
58. Wished that the situation would go away or somehow be over with.	☐ 0	☐ 1	☐ 2	☐ 3	(64)
59. Had fantasies or wishes about how things might turn out.	☐ 0	☐ 1	☐ 2	☐ 3	(65)
60. I prayed.	☐ 0	☐ 1	☐ 2	☐ 3	(66)
61. I prepared myself for the worst.	☐ 0	☐ 1	☐ 2	☐ 3	(67)
62. I went over in my mind what I would say or do.	☐ 0	☐ 1	☐ 2	☐ 3	(68)
63. I thought about how a person I admire would handle this situation and used that as a model.	☐ 0	☐ 1	☐ 2	☐ 3	(69)
64. I tried to see things from the other person's point-of-view.	☐ 0	☐ 1	☐ 2	☐ 3	(70)
65. I reminded myself how much worse things could be.	☐ 0	☐ 1	☐ 2	☐ 3	(71)
66. I jogged or exercised.	☐ 0	☐ 1	☐ 2	☐ 3	(72)
67. I tried something entirely different from any of the above. (Please describe)	☐ 0	☐ 1	☐ 2	☐ 3	(73)

10 (79-80)

APPENDIX H: ATHLETE REPORT

A STUDY OF ATHLETE PARTICIPATION IN THE 1985 NATIONAL CEREBRAL PALSY/LES AUTRES GAMES:

A Report to Athletes and Coaches

July 1986

The authors of this project were Gail M. Dummer, Rochelle V. Habeck, Martha E. Ewing, and Sara R. Overton. Drs. Dummer, Habeck, and Ewing are assistant professors and Ms. Overton is a graduate student in the School of Health Education, Counseling Psychology, and Human Performance at Michigan State University. Address correspondence concerning this report to Gail M. Dummer, Michigan State University, 132 Intramural Circle Building, East Lansing, MI 48824.

This research was funded by the U. S. Office of Special Education and Rehabilitative Services, the Kenny Michigan Rehabilitation Foundation, and Michigan State University.

Why did we do this study?

Participation in sport competition is satisfying and enjoyable for many individuals, including persons with disabilities. In addition, participation in sport is associated with positive outcomes such as improved physical fitness, better mental health, socialization opportunities, and positive self-concept. We were interested in learning more about why individuals with disabilities become involved in sport and why they persist in sport. We felt that the answers to these questions might help other disabled persons to benefit from sport participation.

What aspects of sport participation were studied?

We examined several cognitive aspects of performance, including: (a) reasons for becoming involved in sport; (b) how athletes define personal success or failure in sport; (c) how athletes explain winning and losing performances; (d) how athletes cope with disability; (e) how athletes cope with the stresses of competition; and (f) factors which influence an athlete's decision to persist in sport competition.

Why is this study important?

Although sport opportunities for disabled athletes are becoming more prevalent each year, few researchers or program directors have taken the time to ask athletes why they become involved in sport or what they want from a sport program. The findings from this research should provide some of these answers and may lead to sport programs which are more responsive to the needs of disabled athletes.

In this research, we studied the responses of athletes who have already demonstrated a commitment and desire to excel in sport. These responses helped us to understand factors associated with success and persistence in sport. Hopefully the lessons we learned can be used to assist other disabled persons to become involved in sport and to help less capable athletes improve their performances and persist in sport.

We expect that the results of this research will have implications for participation by disabled persons in other achievement activities, such as employment and education. Persons who cope successfully with the limitations imposed by their disabilities, or who are able to cope with the stress and frustrations associated with competition, and who are motivated to achieve, may be more likely to participate in a variety of achievement domains.

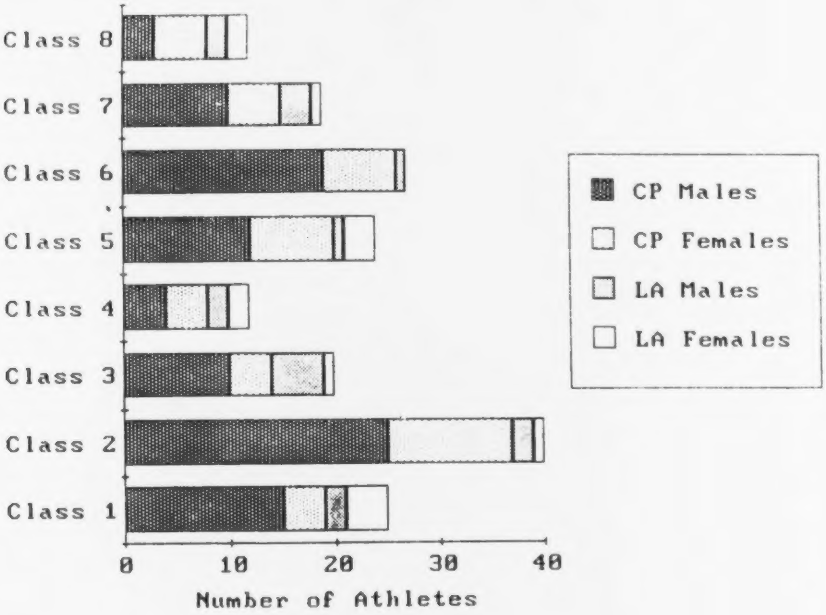
Who participated in this study?

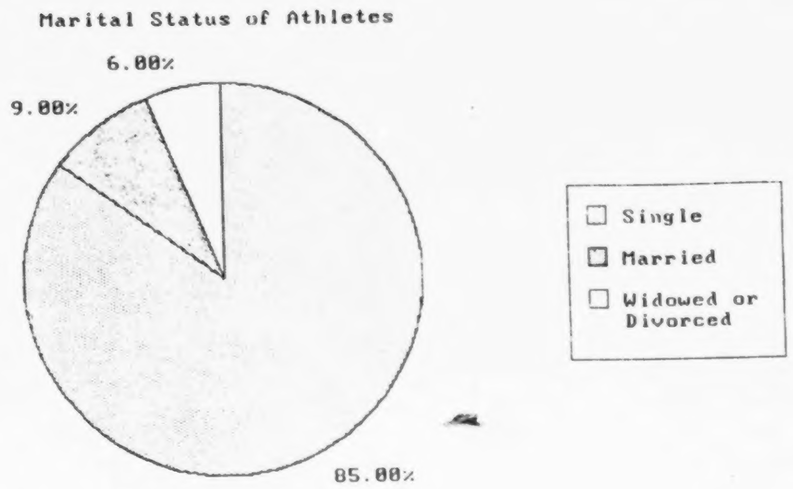
This study included male and female athletes from all over the country, 18 years or older, who participated in the 1985 National Cerebral Palsy/Les Autres Games at Michigan State University. There were 147 athletes with cerebral palsy and 50 athletes with other physical disabilities (les autres) in this study.

Tell me more about these athletes.

The athletes in this study ranged in age from 18 to 66 years (average = 29.7 years). There were more males (63%) than females (37%), and more athletes with cerebral palsy (82%) than les autres athletes (18%). The following charts and tables describe other athlete characteristics.

Distribution of Cerebral Palsy and Les Autres Athletes by Classification and Gender





Highest Level of Education Completed	
Elementary school	6%
Junior high school	6%
Some high school	10%
High school graduate	29%
Some vocational school	2%
Some college	26%
College graduate	14%
Graduate school	7%

Current Employment and Education Status	
Full-time employment	23%
Part-time employment	15%
Full-time student	16%
Part-time student	11%
No school or work	32%

How did these athletes prepare for competition?

Most athletes (81%) followed an organized training schedule, while others (19%) trained whenever they could. Only 17% practiced on a daily basis, with 75% practicing about once a week, and 8% practicing less often than weekly. The majority of athletes in this study (79%) were assisted by a coach during training sessions, whereas, 11% received some help from family members or friends, and 10% practiced without coaching.

Most respondents (83%) competed in events for disabled athletes rather than in competitions which included able-bodied athletes. Many of the athletes were relatively inexperienced in sport competition, with only 44% reporting that they had competed five or more times prior to the Games. The highest level of prior competition reported by these athletes was international (17%), national (39%), state (27%), regional (8%), and local (9%).

These results suggested that athletes have not had the amount of preparation, practice, coaching, and experience in competition that typically characterizes other athletes at this level of competition. Daily practice under the guidance of a qualified coach is prerequisite to elite-level performances in most sports. Accessibility and availability of facilities and coaching, as well as level of funding for sport programs, may be factors which limit the frequency of training for disabled athletes.

What did the athletes do in this study?

Athletes completed several questionnaires. The Achievement Orientation Questionnaire, Coping with Disability Inventory, Locus of Control Rating Scale, and Personal Background Questionnaire were sent to athletes about one month before the Games. A Performance Expectation Questionnaire was completed by the athletes no more than 30 minutes prior to one of their scheduled events. Within 10 minutes after that event, athletes were given a Post-Competition Survey, and before the conclusion of the Games, they completed the Ways of Coping-Revised Questionnaire. The project staff of twelve faculty members and graduate students from Michigan State University, all wearing bright orange "HAP" T-shirts, administered these questionnaires and assisted athletes when necessary.

Why did these athletes get involved in sport?

Or, in scientific terms, what were the achievement orientations of these athletes? Achievement orientations are the various reasons or goals that initially motivate people to become involved in sport. We found that there are five achievement orientations for athletes with physical disabilities: (1) sport mastery - meeting the challenge and demands of an activity; (2) sport competence - wanting to demonstrate ability to others; (3) sport venture - enjoying the new and/or adventurous/risky aspects that sport can provide; (4) cognitive ability - using leadership skills as well as appropriate strategies in sport competition; and (5) social approval - participating in sport to please others.

We found that the achievement orientations of disabled athletes were similar to those of nondisabled athletes. Secondly, virtually all of the athletes used all of the achievement orientations to some degree. Here is a breakdown of the most frequent responses:

Social approval
73% wanted to make others happy.
65% said others made me feel good.

Sport mastery
65% said their performances made them feel good.
60% said they reached their goals.

Sport venture
65% said they had, indeed, experienced adventure.
57% said this experience was new and different for them.

Cognitive ability
58% said this showed they were leaders.
56% said they thought of necessary strategies while performing.

Sport competence
42% recognized themselves as good athletes.
38% said they demonstrated athletic skill.

How well did these athletes cope with disability?

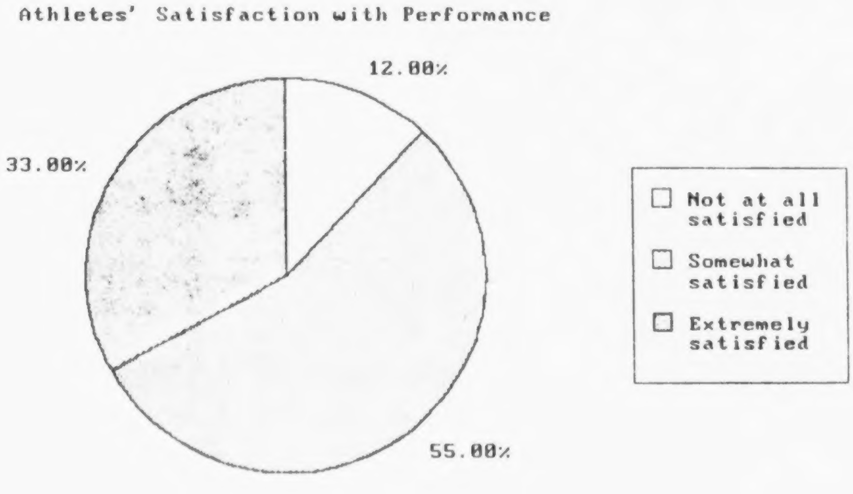
Coping with disability is a way of describing how an individual is managing his or her disability at a given point in time. Individuals who are considered to be good copers typically score high in the areas of social competence (involvement in rewarding activities and relationships) and quality of life (general satisfaction with oneself and one's lifestyle). The coping process is a lifelong attempt to adapt to the demands or stress of life with a disability.

How do disabled athletes cope with disability in comparison to other groups of disabled persons? We found that the coping with disability score for athletes in this study (average = 291 points) was slightly higher than the score for a group of disabled adults in independent living centers (average = 283 points), and was also higher than the score for a group of individuals with spinal cord injuries (average = 279 points).

Athletes in the 1985 Cerebral Palsy/Les Autres Games can be characterized as moderately high copers. These results confirmed our expectations that the athletes in this study had already achieved a high level of social competence and quality of life prior to their participation in the Games.

Were they satisfied with their performances?

Not every athlete in an event is a winner, if winning is defined as taking home a medal. However, most athletes are pleased or satisfied with some aspect of their performances even when they do not win. Examples of personal success might include performing well against opponents of superior ability, achieving a personal best time or score, or selecting an effective strategy in a particular situation. In this study, the proportion of athletes (88%) who were satisfied with their performances was much greater than the percentage of athletes (43%) who placed 1st, 2nd, or 3rd in their events. Thus, "winning" is not the only or even necessary requirement for obtaining satisfaction from participation.

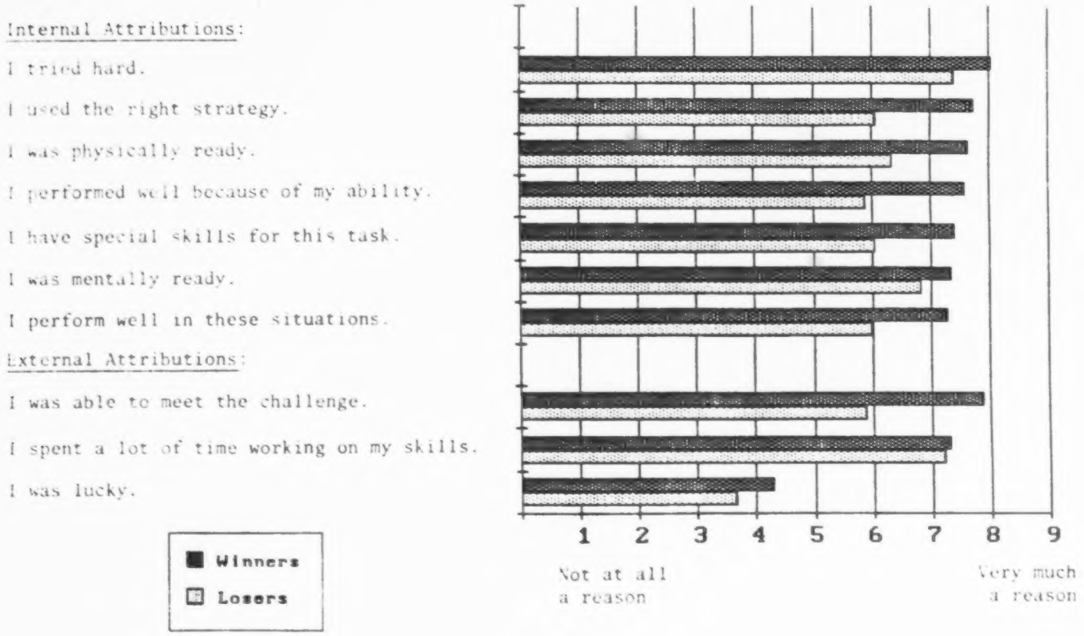


What explanations did athletes give for their performances?

Researchers use the word "attributions" to describe the reasons athletes give to explain their performances in sport. Attributions may be categorized as internal (within the athlete's control) or external (outside the athlete's control). Internal attributions include ability and effort. External attributions include competitors' ability levels and luck. Usually able-bodied athletes take credit for successful performances with internal attributions, and try to "save-face" in the event of unsuccessful performances by blaming external factors.

As expected, winners in this study (those who placed 1st, 2nd, or 3rd) were more likely than losers to explain their performances in terms of internal attributions such as ability, special skills for the task, or using the right strategy. However, contrary to our expectations, winners were also more likely to use external explanations. External attributions may be realistic for athletes with cerebral palsy since their internal qualities (e.g. involuntary muscular contractions) are somewhat unreliable and unstable. The following chart gives attributions for winners and losers.

Attributions for Winners and Losers



How did they cope with their performances?

Coping strategies are emotion or problem focused ways in which people respond to situations that they perceive as being stressful. These strategies are likely to change depending on the specific situation and the person's view of the situation. The situation of interest in this study was participation in the overall experience of the Games. The coping strategies we studied are described below:

Confronting: Expressing anger toward the person causing the problem or blaming something else for one's problems.

Escape-avoidance: Avoiding contact with people in general or keeping others from knowing how bad things are.

Accepting responsibility: Recognizing one's own contribution or influence upon a situation, resolving to change something about one's own actions.

Self controlling: Trying to keep feelings to oneself.

Seeking social support: Talking with others to find out more about the situation or accepting sympathy from others.

Problem solving: Trying to analyze the problem in order to understand it better or making a plan of action to improve the situation.

Positive reappraisal: Looking for the "silver lining" or focusing on some positive aspect of a situation.

Distancing: Standing back from the situation or waiting to see what will happen.

We found that athletes with disabilities used all of the coping strategies mentioned above. A difference was found between the coping strategies used by athletes who planned to persist in sport and those who did not. Those planning to persist used problem solving, positive reappraisal, and distancing more often than those not planning to persist. Non-persisters in sport used confrontation and escape-avoidance more often than persisters.

The coping strategies associated with persistence represent an interesting combination of strategies that focus directly on the problem and associated feelings or emotions. Problem solving focuses on planful steps of action, while positive reappraisal interprets events in a way that fosters growth, and distancing minimizes threat or harm. Coping strategies used by non-persisters seem to focus on unrealistic methods of dealing with a situation. Escape-avoidance refers to denial of the problem or feelings associated with stressful events. As described here, confronting refers to expression of negative feelings in a way that may not assist an athlete to resolve the situation or problem.

These results are exciting! If persistence in sport is consistently associated with use of certain strategies, then perhaps athletes can be taught to appraise the situation differently and to use coping strategies which are effective when coping with the challenges and outcomes of participation in sport.

Do these athletes plan to continue in sport?

The benefits associated with participation in sport are not always felt during the first few weeks of training or as a result of the first few competitions entered. More often, outcomes such as improved physical fitness or enhanced self concept are the result of regular training and participation in sport. Many of the athletes in this study are likely to realize the benefits of participation, as 89% reported that they are likely or very likely to continue in sport.

The results of our research suggest that disabled athletes may be more likely to persist in sport if (a) sport programs are structured to permit athletes with various achievement orientations to achieve their goals in sport; (b) athletes are satisfied with their performances and attribute their performances to internal factors; and (c) athletes use constructive coping strategies in response to stress associated with sport participation.

What does this all mean for athletes and coaches?

The results concerning achievement orientations help us to understand what motivates athletes to compete. By knowing why an athlete participates in sport, the coach and athlete can work together to make practices more satisfying and successful. Realistic goals can be made that are in keeping with the desires of the athlete.

From previously published research on attributions by able-bodied athletes, we have learned that athletes who believe that they have demonstrated ability in competition are more likely to persist in sport than those who explain their performances using other attributions. Coaches can help by monitoring athletes' attributions and by helping athletes to recognize that poor performance is not always a result of low ability, but may be due to low effort or readiness to perform, or to external causes. For athletes to persist, they should avoid attributing a loss or poor performance to low ability.

Athletes should be encouraged to use constructive appraisals and coping strategies in response to stress associated with sport competition. Constructive strategies include problem solving, positive reappraisal, and distancing. Coaches can help athletes to learn about ways in which they work against themselves with ineffective coping strategies, and can also teach or model the use of effective strategies for coping with the inevitable losses or disappointments that occur when participating in challenging situations. Athletes who learn to use positive coping strategies in the context of sport may also benefit from use of these strategies in other achievement activities.

What does this all mean for sport programs for physically challenged athletes?

From this study, we found that the achievement orientations of athletes with disabilities are similar to those previously found for able-bodied athletes. Five achievement goals were noted, namely social approval, sport mastery, sport venture, cognitive ability, and sport competence. This finding suggests that sport programs for disabled persons should be structured so that athletes with different achievement goals will be reinforced for attaining their goals in sport. Presently, some programs for disabled athletes stress reinforcement on the social approval level. These programs would be more responsive to athletes by providing support and recognition for athletes whose goals include skill mastery, demonstration of leadership skills, competition at elite levels, or adventure, in addition to rewarding athletes who seek the attention or approval of others.

A second implication for sport programs is the need for more intensive training programs in preparation for elite-level competition. Few athletes in this study trained on a daily basis. Additional training opportunities and facilities are clearly needed. Such training should include mental preparation for competition - learning to control anxiety, improving concentration skills, relaxation training, and using imagery to facilitate coping with anxiety and to enhance performance. In addition, consideration should be given to physical education or sport programs for disabled children and youth as a means of helping potential athletes to improve skill levels.

What does this all mean for researchers?

Most research raises more questions than it answers, and this project was no exception. The rehabilitation counselors on our team are interested in studying coping behaviors of disabled persons in other achievement domains (e.g. education, employment), ways to teach constructive coping skills to disabled persons who become frustrated or disappointed in their attempts to achieve, and the consistency of achievement orientations across different achievement domains. Sport psychology questions of interest include the development of psychological skills training programs for disabled athletes, consideration of attribution retraining as a method for preventing individuals from dropping out of sport participation, and development of coaching effectiveness programs. Considerations related to adapted physical education and recreation include the influence of physical education and sport programs for disabled children and youth upon sport participation during the adult years, as well as ways to improve accessibility and availability of physical education and sport programs for disabled persons of all ages.

Continued cooperation among athletes, coaches, and researchers will facilitate acquisition of knowledge concerning sport participation by persons with disabilities. We are grateful for the assistance of the athletes and coaches associated with this project, and we look forward to working with you to improve sport opportunities for disabled athletes.

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APPENDIX I: ACHIEVEMENT ORIENTATIONS AND COPING PROCESSES OF DISABLED ATHLETES

Presented to American Association for
Counseling and Development

ACHIEVEMENT ORIENTATIONS AND COPING PROCESSES OF DISABLED ATHLETES

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INTRODUCTION

Although participation in achievement domains such as work, school, and sport is considered important to successful rehabilitation of persons with disabilities, little empirical research is available on the psychological behaviors of disabled persons in achievement situations. Research designed to identify cognitive psychological factors associated with positive outcomes (e.g. social competence, persistence) in achievement situations could be useful to counselors who assist disabled clients.

The achievement behavior of interest in this study was persistence in competitive sport. The cognitive behaviors associated with sport which were investigated in this study included achievement orientations, coping strategies, and coping status with disability. A conceptual model illustrating hypothesized relationships among these variables is presented in Figure 1.

Achievement orientations refer to the athletes' goals or motivations for participating in sport. Research among able-bodied athletes has revealed four achievement orientations: (a) sport competence - wanting to demonstrate ability to others; (b) social approval - seeking approval or attention from significant others; (c) sport mastery - deriving satisfaction from acquiring competence or meeting the challenge; and (d) sport venture - seeking the excitement of competition (Ewing, 1981). More recently a fifth orientation, cognitive ability, has been proposed (Pemberton, Petlichkoff, & Ewing, 1986). This orientation is related to leadership skills and using appropriate strategies in competition. Individuals are more likely to persist in sport if the outcomes of their experience correspond to their reasons for participation.

Coping is a process of evoking strategies to meet the demands of a stressful encounter perceived as exceeding or taxing a person's resources. Coping strategies are depicted as emotion-focused or problem-focused. Choice of strategy is related to appraisal of the threat, harm, or challenge involved in the stress situation. The coping process is characterized by an individual's responses to the phases of a stressful encounter, namely, anticipation, waiting for results, and dealing with outcome (Lazurus & Folkman, 1985). Research has indicated that eight coping responses or strategies are typical of adults who cope with various life stressors and of college students coping with exam stress: seeking social support, distancing, positive reappraisal, confrontation, escape-avoidance, self-controlling, problem solving, and accepting responsibility.

Disability has also been viewed as a stress condition which requires coping responses (Schontz, 1973; 1978); however, in this case, the individual is coping with a chronic condition rather than a specific stressful event. Blom and Kulkarni (1985) developed the Coping with Disability Inventory to assess the disabled person's coping status. Individuals with high coping status report positive quality of life, social competence, and acceptance of disability.

Coping processes which may be observed in sport include responses to the phases of a typical stressful encounter, namely, pre-event anticipation, waiting for results, and post-event coping with outcome. Successful resolution of stressful situations is typically associated with positive outcomes such as social competence (White, 1979), persistence (Ewing, 1981), and satisfaction (Blom, 1980). Presumably, these positive outcomes generalize to future achievement situations and stressful encounters.

The purpose of this research was to study the influences of achievement orientations and coping behaviors of physically disabled athletes on persistence in sport. Sports participation was viewed in terms of a stressful encounter. In the pre-event phase, coping status and achievement orientations were the psychological characteristics of interest. During competition, coping strategies were studied to determine situation-specific responses associated with performance. The post-event variable of interest was persistence in sport.

METHOD

Subjects

Subjects for this study were 150 athletes with cerebral palsy or other physical disabilities who participated in the 1985 National Cerebral Palsy/Les Autres Games. Athletes ranged in age from 18-66 years. Males (63%) comprised a much larger segment of the sample than females (37%). Most athletes characterized their disability as non-progressive (93%) and stable (62%), and most (78%) had acquired their disability congenitally.

Procedures

The Achievement Orientation Questionnaire (Ewing, 1981) and the Coping With Disability Inventory (Kulkarni & Blom, 1985) were administered by mail prior to the athletes' participation in the Games to assess achievement orientations and coping with disability, respectively. Preferred coping strategies were assessed following the athletes' events using the Ways of Coping-Revised (Lazurus & Folkman, 1985). Persistence was assessed using a post-event questionnaire which asked athletes to indicate the likelihood that they would continue to participate in sport.

RESULTS

Persistence

Do these athletes expect to persist in sport? Over three-fourths of the athletes who participated in this study expected to continue in sport. The mean persistence score for this sample of athletes was 1.37 on a scale ranging from (1) very likely to persist to (4) not at all likely to persist. High persisters (76%) were designated as those scoring above the mean and low persisters (24%) as those scoring below the mean.

Psychological Characteristics

What are the achievement orientations of disabled athletes? Oblique rotation factor analysis techniques revealed five achievement orientations for athletes with physical disabilities: sport mastery, sport competence, sport venture, cognitive ability, and social approval. Factor weightings for these disabled athletes and for a comparison sample of adolescents who attended sport camps are given in Table 1.

Do achievement orientations help to explain persistence in sport? Results of a MANOVA indicated that high and low persisters do not differ in their use of achievement orientations ($F_{5,134} = 1.30$, $p > .05$). Means and standard deviations for achievement orientations for high and low persister groups are given in Table 2.

What is the coping status with disability for this sample? A t-test revealed no difference ($t = 1.74$, $p > .05$) in coping status with disability for the 150 athletes from this study and the 46 disabled adults from independent living centers studied by Kulkarni (1985). Mean scores for athletes and adults with disabilities were 291.47 (SD = 27.23) and 283.46 (SD = 27.26) respectively on a scale that ranges to a high of 400 points.

Does coping status with disability help to explain persistence? Coping status with disability did not differ for high and low persisters. Results of a one-way ANOVA for coping status and persistence were not significant ($F_{1,114} = 0.001$, $p > .05$). Mean coping status scores for high and low persisters were 290.35 (SD = 25.75) and 290.42 (SD = 28.11), respectively.

Are achievement orientations and coping status with disability related? Each of the five achievement orientations was found to be positively related to coping status, with achievement orientations associated with high coping status scores. Pearson correlations ($p < .01$) for achievement orientation with coping status were: social approval ($r = .25$), sport mastery ($r = .27$), sport venture ($r = .36$), cognitive ability ($r = .36$), and sport competence ($r = .21$).

Situation-Specific Coping Strategies

Which coping strategies were used by athletes with disabilities? Factor analysis employing oblique rotation indicated that this sample used all of the coping strategies identified by Lazurus and Folkman (1985): confronting, escape-avoidance, accepting responsibility, self-controlling, accepting social support, problem solving, positive reappraisal, and distancing.

Do coping strategies help to explain persistence? A MANOVA revealed that high and low persisters differed in their use of coping strategies ($F_{8,150} = 2.64$, $p < .01$). One significant discriminant analysis function differentiated high and low persisters on use of five of the eight coping strategies. As indicated by mean scores in Table 3, high persisters tended to use distancing, problem solving, and positive reappraisal more often than low persisters; whereas, low persisters tended to use confrontation and escape-avoidance.

Interaction of Psychological Characteristics with Coping Strategies

How are achievement orientations and coping strategies related? Coping strategies were related to achievement orientations as indicated by two significant canonical variates. The achievement orientations of social approval and sport mastery and the coping strategies of problem solving and distancing contributed most to the first variate ($R_c = 0.38$, $p < .001$), which accounted for 10% of the variance. Sport competence, social approval, positive reappraisal, and confronting contributed most to the second variate ($R_c^2 = 0.30$, $p < .05$), which accounted for 5% of the variance. These results confirmed the hypothesis that post-event coping strategies and pre-event achievement orientations are related. Those coping strategies most positively related to persistence are also the categories contributing most to the canonical relationship.

How are coping status with disability and use of situation-specific coping strategies related? Results of a MANOVA on coping strategies by coping status groups (high, moderately high, moderately low, and low) were not significant ($F_{15,377} = 9.77$, $p < .05$). These results indicate no relationship between situation-specific coping strategies and coping status with disability.

DISCUSSION

The athletes in this study consisted primarily of persisters, those who expect to participate again in competitive sport. This finding is not surprising because most of the athletes reported considerable sport experience and time spent in training. They also placed a high value on sport participation.

We expect that this assessment of persistence is biased in two ways. First, the rating is based on athletes' self-reported expectations that they will persist, rather than actual persistence behaviors. Also, the quality of competition is improving as the organization of the Games advances. Thus, some athletes may fail to persist as the standards become more rigorous. It should be noted that this positively skewed distribution of persisters provided little variation for testing the relationships among variables that might explain persistence in subsequent analyses.

The achievement orientations of this sample were similar to those previously found for able-bodied athletes. In some sport organizations for disabled people, reinforcement consists primarily of social approval, regardless of performance outcome. Our findings indicate that there is little difference between the goals of achievement behavior of disabled and able-bodied athletes. Consequently, coaching strategies and the organization of sport for disabled persons should employ similar assumptions and rationale as in non-disabled sport.

The coping status with disability for this sample was similar to a sample of disabled adults involved in community centers for independent living. These athletes can be characterized as moderately high copers which confirms our expectation that athletes had already achieved some level of confidence and social competence prior to this competitive situation.

The relationships of both achievement orientations and coping status with disability to persistence were not demonstrated in this study. However, these results are probably not an adequate test of the relationships based on the assessment and results obtained for the persistence variable explained earlier. Further research is warranted to better examine the relationships between achievement orientations and coping status with disability with persistence, as well as other psychological characteristics which may be more helpful in explaining persistence.

The interrelationship between achievement orientations and coping status with disability was demonstrated in this study. The positive correlations were strongest for the sport venture and cognitive ability orientations. The sport venture orientation suggests that high level copers are able to transcend their disabilities and focus on the new and adventurous aspects of the sport encounter. The cognitive ability orientation suggests that high level copers are interested in demonstrating their cognitive finesse and leadership. This is an exciting finding in that cognitive ability is an internal asset within the individual's control, which is not related to severity of disability.

Coping strategies found to be associated with persistence (i.e., problem solving, positive reappraisal, and distancing) represent an interesting combination of strategies that focus directly on the problem as well as on the associated affect. Problem solving emphasizes planful steps of action, positive reappraisal interprets data in ways that enhance personal growth, and distancing minimizes harmful or threatening interpretation of the data. Coping strategies that were associated with nonpersistence (i.e., confrontation and escape-avoidance) are more challenging to understand. Escape-avoidance represents naive and distorting defenses that neither directly nor realistically address the problem or the associated affect. Confronting, as it is assessed in this instrument, consisted of expressing negative affect or risk taking that may not assist the person in effectively resolving the problem or associated affect that are necessary to enable persistence. These situation-specific strategies parallel previous findings about the characteristics of effective and ineffective coping and provide a preliminary basis to guide intervention strategies.

Testing the interrelationships of the psychological characteristics and the coping strategies resulted in some surprising findings. The lack of a significant difference among coping status groups in their use of coping strategies suggests that a certain level of coping with disability may already have been achieved before individuals engage in an achievement situation.

The relationship of achievement orientations and coping strategies is complex. The orientations of social approval, sport mastery, and cognitive ability contributed the most to the significant canonical correlation. The coping strategy of distancing was positively correlated with soical approval whereas problem solving was positively correlated with sport mastery and cognitive ability. In addition, confronting was positively correlated with sport competence while positive reappraisal was negatively correlated. Due to the explanatory nature of this study, the interpretation of these results are speculative. Athletes who participate in sport to gain approval for their efforts may find distancing a faciliatative process that buffers the threat to self-worth initially. Sport mastery and cognitive ability oriented athletes, who are motivated to meet the challenge of competition of a situation or, may not be as concerned with either external demonstration of ability or gaining approval for their efforts. Thus, the use of a more direct problem solving coping strategy by these individuals may better facilitate the attainment of their goals.

Finally, the relationship of sport competence with confronting and positive reappraisal appears to be sending a mixed message. This variate accounted for only 5% of the variance and should be interpreted with caution. Sport competent oriented athletes are motivated to demonstrate their ability to others. Confronting strategies attribute blame to the situation or others involved in the situation to avoid attributing failure to lack of ability. Positive reappraisal involves reinterpretation of the outcome. Competence oriented athletes may be more interested in strategies that actually enhance their performance, rather than discounting the importance of their performances.

CONCLUSION

The results of the study support the major aspects of the theoretical model developed to explain persistence of disabled athletes in sport. The findings support the importance of specific cognitions, emotions, and resulting behaviors that facilitate persistence in challenging situations. It may be possible for counselors, coaches, and other advocates to assist disabled persons to acquire strategies that enable the rewards of persistence toward valued achievement goals.

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FIGURE 1

THEORETICAL MODEL RELATING ACHIEVEMENT AND COPING TO ANTICIPATED PERSISTENCE IN SPORT

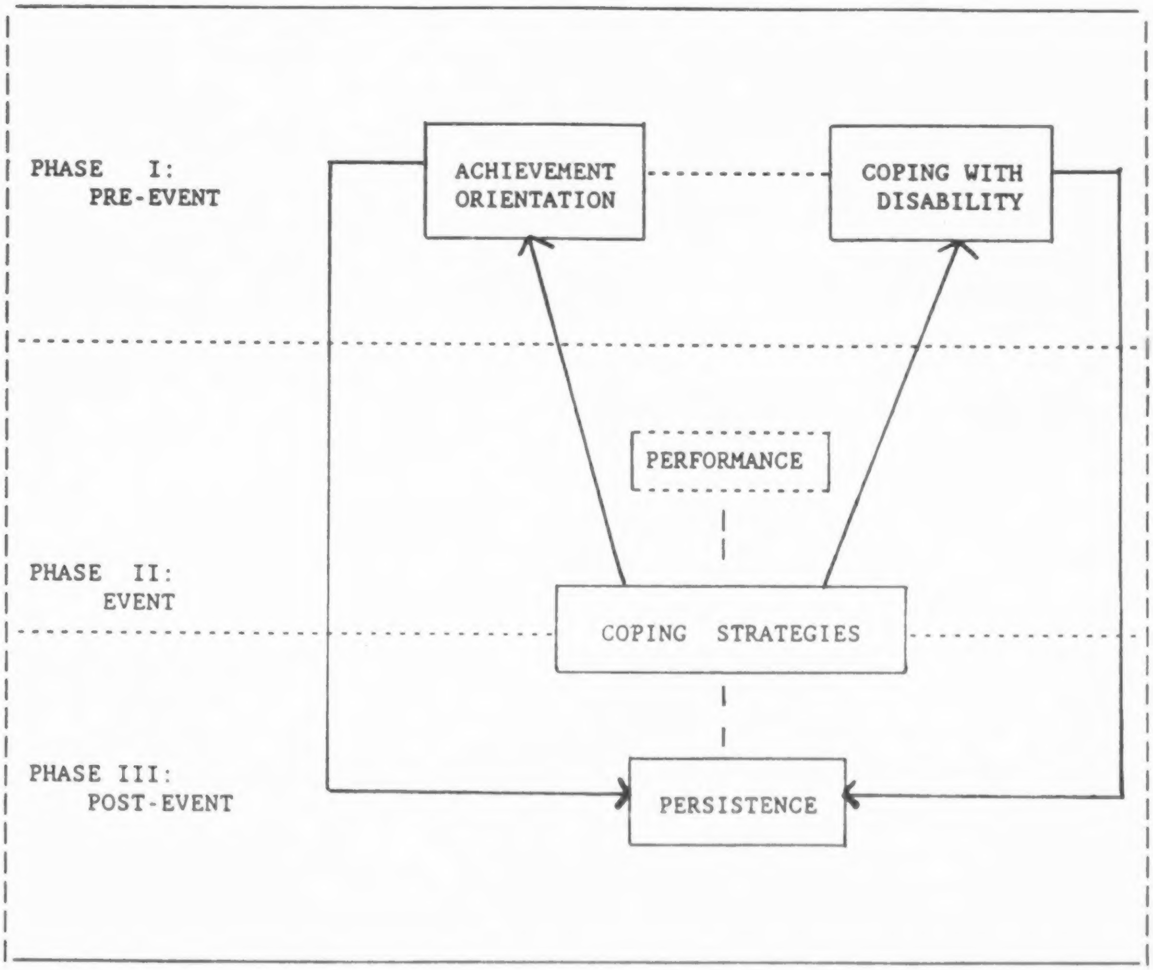

TABLE 1. Comparison of Factor Weights for Achievement Orientations for Two Samples of Athletes

	Athletes from Sport Camps (n = 400)	Athletes from CP/LA Games (n = 150)
Social Approval		
Pleased people	.64	
Demonstrated importance	.46	
Made others happy	.73	
Others made me feel good	.65	.72
Others said I did well	.65	.54
Sport Mastery		
Reached a goal	.60	.49
Performance made me feel good	.65	.55
Met the challenge	.53	.64
Sport Venture		
Experienced adventure	.65	.91
Did something new and different	.57	.42
Completed something	.49	
Cognitive Ability		
Showed how smart I was	.33	.77
Showed I was a leader	.58	.44
Hard work paid off	.43	
Thought of needed strategy	.56	
Sport Competence		
Recognized as a good player	.42	.66
Demonstrated athletic skill	.38	.88

TABLE 2. Means and Standard Deviations for Achievement Orientations for High and Low Persisters

	High Persisters (n = 105)		Low Persisters (n = 35)	
Social approval	3.87	(0.66)	4.12	(0.51)
Sport mastery	4.59	(0.59)	4.51	(0.54)
Sport venture	4.22	(0.56)	4.22	(0.61)
Cognitive ability	3.67	(0.66)	3.81	(0.72)
Sport competence	4.20	(0.66)	4.17	(0.57)

TABLE 3. Means and Standard Deviations for Coping Strategies for High and Low Persisters

	High Persisters (n = 121)		Low Persisters (n = 38)	
Confronting	6.06	(4.78)	7.21	(3.59)
Distancing	8.13	(5.40)	8.21	(3.39)
Self-controlling	10.01	(6.44)	10.74	(3.71)
Seeking social support	8.19	(5.49)	9.37	(3.34)
Accepting responsibility	5.22	(3.66)	6.01	(2.83)
Escape-avoidance	6.12	(7.59)	9.13	(4.65)
Problem solving	11.10	(4.91)	10.26	(3.77)
Positive reappraisal	11.68	(6.86)	11.08	(5.00)

TABLE 4. Canonical Correlations for Achievement Orientations and Coping Strategies

	Canonical Variate 1	Canonical Variate 2
Achievement Orientations		
Social approval	- 0.963	- 0.557
Sport mastery	0.625	- 0.217
Sport venture	0.116	- 0.393
Cognitive ability	0.521	0.108
Sport competence	- 0.140	1.108
Coping Strategies		
Confronting	- 0.573	3.050
Distancing	- 2.550	1.407
Problem solving	3.891	2.148
Positive reappraisal	0.980	- 3.846
Escape-avoidance	- 1.998	- 2.446

APPENDIX J: COGNITIVE REACTIONS OF ATHLETES WITH CEREBRAL PALSY TO SUCCESS AND FAILURE IN SPORTS COMPETITION

Presented to the American Alliance for
Health, Physical Education, Recreation and Dance

COGNITIVE REACTIONS OF ATHLETES WITH CEREBRAL PALSY TO SUCCESS AND FAILURE IN SPORTS COMPETITION

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Participation in sport is generally associated with positive outcomes for the disabled athlete. The National Association of Sports for Cerebral Palsy (NASCP) provides competitive sport opportunities for persons who have cerebral palsy or other multiply-disabling conditions. These activities are designed to "assist people to enter a positive process of improving functional abilities, accepting challenge, learning to win and lose, contributing to a team effort, developing positive self esteem, extending social experiences, and preparing for competitive activities found in independent living." The most important outcomes of sports participation as perceived by athletes with cerebral palsy are fitness, socialization/friendships, self-concept/mental health, interesting/exciting use of leisure time, tension release/relaxation, and motor skills (Sherrill, 1986a).

Increased participation is a primary goal of many sport organizations for persons with disabilities. The United States Olympic Committee, of which NASCP is a member, lists as one of its objects and purposes, "to encourage and provide assistance to amateur athletic programs and competition for handicapped individuals . . ." If the goal of increased participation is to be realized, it is important to understand how individuals explain their performances in sport.

Several investigators have demonstrated that attributions of non-disabled performers to winning and losing (objective outcome) affect subsequent participation and performance in sport. Based on Weiner's (1972) model, explanations given by able-bodied athletes for their performances may be categorized as stable or unstable characteristics of the individual and in terms of internal or external locus of control. Although Weiner originally proposed that four attributions (ability, effort, luck, and task difficulty) are operative in achievement situations, research in sport environments has revealed that it is necessary to consider additional attributions which account for situational variables such as individual versus team ability and effort, officiating, and environmental conditions (Bukowski & Moore, 1980; Rejeski & Brawley, 1983; Roberts & Pascuzzi, 1979).

In sport situations, there is some evidence of a self-serving bias in which individuals tend to accept responsibility for winning, and when possible, to deny responsibility for losing. Winners are more likely than losers to attribute performances to internal factors such as ability and effort. However, researchers have noted that it is often difficult to deny responsibility for negative outcomes because of the emphasis upon ability and effort in sport situations (Bukowski & Moore, 1980; Scanlan & Passer, 1980a, 1980b).

Another important cognitive factor in determining attributions is the manner in which individuals define personal success and failure (subjective outcome) in sport. Roberts and Duda (1984) suggested that interpretation of success or failure depends upon whether the individual perceives that he or she demonstrated a desirable personal characteristic in competition. Spink and Roberts (1980) further indicated that clear outcomes (satisfied winner or dissatisfied loser) are associated with internal attributions; whereas, ambiguous outcomes (dissatisfied winner or satisfied loser) are more likely to be associated with external attributions.

The purpose of this study was to determine attributions given by athletes from the 1985 National Cerebral Palsy Games in reaction to objectively and subjectively defined success or failure in sports competition. A priori hypotheses were:

(a) that, in general, athletes with cerebral palsy would use the same range of attributions as non-disabled athletes to explain both objective and subjective performance outcomes, and

(b) that, given the nature of their disabilities, these athletes might define and make attributions to ability differently than able-bodied athletes.

METHOD

Subjects

All athletes entered in the 1985 National Cerebral Palsy Games were contacted by mail to determine willingness to participate in this study. An information packet, including a personal background questionnaire, was mailed to those athletes aged 18 years and older who volunteered to participate. During the Games, these athletes responded to pre-event and post-event questionnaires. Completed data were obtained from 147 athletes with cerebral palsy. Table 1 describes pertinent subject characteristics.

The results of the personal background questionnaire indicated that these athletes value sport: 35.2% reported that sport is a most important factor, 56.3% a very important factor, and 8.5% a somewhat important factor in their lives. Training occurred on a daily basis for 17.0%, and on a weekly basis for 75.2% of these athletes. Most (60.0%) trained more than 60 minutes per session; whereas, fewer (29.0%) reported practice sessions of 30-60 minutes in length. Most respondents (85.7%) competed in events for disabled athletes rather than in competitions which included able-bodied athletes. Prior to their participation in the 1985 National Cerebral Palsy Games, 14.0% had competed in international meets, 43.4% in national meets, 30.8% in state meets, and 11.9% in local or regional meets.

Procedures

Pre-event questionnaires were administered by trained data collection assistants within 30 minutes prior to the athlete's event. Pre-event questions concerned expected levels of performance, perceived athletic ability, and confidence in ability. Sample questions included:

> "What score, time, or performance rating do you expect to have in today's event?"
>
> "How confident are you that you will achieve that score, time, or performance rating today?"
>
> How well do you think you will do compared to other athletes in today's event?"

Performance data included the athlete's event ranking. In this study, objective outcomes were defined as winning being a 1st, 2nd, or 3rd place finish, and losing a 4th or greater place finish. Subjective outcomes were success and failure, with success defined as satisfaction with performance, and failure as dissatisfaction with performance.

Post-event questionnaires were administered within 5-10 minutes following the athlete's event. Post-event questions concerned attributions associated with performance outcomes, performance satisfaction, and future expectations of performance in similar competitive events. Sample questions included:

> "How satisfied were you with your performance?"
>
> "How would you rate your performance today?"
>
> "Based upon your performance tonight, how well do you think you will perform next time?"
>
> "How confident are you that you will perform up to your potential next time?"

In addition, eleven attributions (see Figure 1) were assessed using a 9-point response scale ranging from "not at all a reason" to "very much a reason."

RESULTS

MANOVA procedures (Hotelling method) and follow-up discriminant analyses were used to determine: (a) the influences of gender and competition classification on attributions; (b) attributions to objectively-defined winning and losing; and (c) attributions to subjectively-defined success and failure.

Influence of Subject Characteristics on Attributions

Attributions did not differ for male and female athletes ($F_{11,105}$ = 1.51, $p > .05$); however, MANOVA did reveal significant differences in use of attributions across competition classifications ($F_{77,681}$ = 1.35, $p < .05$). Discriminant analysis for competition classification revealed two significant functions involving the attributions of performing well, luck, working on skills, and meeting the challenge. Function #1 differentiated Class 1, 2, and 6 athletes from Class 3, 4, 5, 7, and 8 athletes (χ^2_{28} = 68.86, $p < .01$). Function #2 differentiated Class 2, 5, and 8 athletes from Class 1, 3, 4, 6, and 7 athletes (χ^2_{18} = 34.83, $p < .01$). Function #1 indicated that attributions of the more disabled athletes (Class 1, 2, and 6) differed from those of less disabled athletes. Function #2 was not interpretable in terms of known characteristics of the athletes, but may be due to differences in functional ability within classification levels. Means and standard deviations for attributions by competition classification are given in Table 2.

Attributions to Objective Outcome

Table 3 describes the attributions of these athletes to winning and losing in national-level competition. MANOVA indicated significant differences between winners and losers ($F_{11,92}$ = 2.82, $p < .01$). Although the one significant discriminant analysis function involved all eleven attributions (χ^2_{11} = 28.01, $p < .01$), working on skills and meeting the challenge were the most important variables in distinguishing winners from losers. Consistent with published literature, winners were more likely than losers to use internal attributions. Contrary to the literature, winners were also more likely to use external attributions.

Attributions to Subjective Outcome

Personal success was defined as a response greater than one SD above the mean for satisfaction with performance, and failure as a response less than one SD below the mean for satisfaction. Attributions to success and failure are given in Table 4. The MANOVA for subjective outcome was significant ($F_{33,152}$ = 5.20, $p < .01$). Discriminant analysis revealed one significant function which differentiated satisfied winners and losers from dissatisfied winners and losers (χ^2_{21} = 95.84, $p < .01$). Attributions which defined this function were meeting the challenge, trying hard, using the right strategy, being physically and mentally ready, ability, and performing well. Satisfied performers made more positive attributions to meeting the challenge, trying hard, and using the right strategy than dissatisfied performers (see Table 4).

DISCUSSION

As hypothesized, athletes with cerebral palsy employ a variety of attributions to explain their performances in sport. In general their use of attributions was similar to those of able-bodied athletes. When differences in use of attributions were noted, they were generally associated with realistic appraisal of athletes' abilities or of situational variables.

As predicted by the research literature, winning and successful athletes in this sample did use internal attributions more frequently than losing and unsuccessful athletes. However, contrary to the literature, winning and successful athletes were also more likely to use external explanations. Although use of external attributions may be counter to the norm in sport situations for able-bodied athletes, such attributions may be considered appropriate for athletes with cerebral palsy due to the somewhat unreliable nature of their abilities. Because cerebral palsy is characterized by internal qualities which are highly unstable, namely involuntary muscular contractions and abnormal reflex activity, it seems reasonable that these athletes would rely more heavily upon external explanations of their performances than do able-bodied athletes.

Spink and Roberts (1980) indicated that clear outcomes are associated with internal attributions; whereas, ambiguous outcomes are more likely to be associated with external attributions. The results of the current study did not agree with that finding, perhaps because both successful and unsuccessful winners and losers used a wide variety of attributions to explain their performances. Failure to replicate Spink and Robert's results may be due to lack of experience by these athletes in competitive sport. By their own admission, few of these athletes trained regularly (only 17.0% on a daily basis), and most competed infrequently (anecdotal records indicated that most areas of the country offered only a state meet and a regional meet each year). Perhaps as sport opportunities for athletes with cerebral palsy become more prevalent and athletes' skills improve, athletes will respond with characteristic attributional patterns to different event outcomes.

In general, winning or successful athletes were just as likely to credit unstable as stable factors for their performances. For winners and successful athletes, the mean values for attributions of effort, physical or mental readiness, performing well, or meeting the challenge were similar to those for ability, special skills for the task, using the right strategy, and working on skills. Although all attributions were used less often by losing or unsuccessful athletes, they too tended to explain performance using both stable and unstable factors. Luck was a seldom used attribution for any group of athletes. The variety of attributions used by these athletes suggested that they were more concerned with describing factors associated with level of performance than with win-loss status.

The significant MANOVA for competition classification by attributions is consistent with the above findings. Class 1 and 2 athletes (the most disabled wheelchair-bound athletes) and Class 6 athletes (the most disabled ambulatory athletes who did not use assistive devices) were more likely to claim luck as a reason for their performances, and less likely than other athletes to make attributions to performing well, working on skills, or meeting the challenge. The use of external, unstable attributions by the more severely disabled athletes seems reasonable in light of their performance capabilities. Failure to detect significant differences in the attributions of male and female athletes may be due to the influence of disability.

The results of this investigation were in agreement with findings reported in the literature concerning the variety of attributions used by individuals in sport environments. The four attributions proposed by Weiner accounted for a modest proportion of the explanations athletes gave for the outcomes of their participation in the Cerebral Palsy Games. The variety of responses may have been greater had additional attributions been included in the post-event questionnaire. Suggested additional attributions include officiating (some athletes felt that they were unfairly classified for competition, others were not afforded adequate warmup time), athletic equipment (some athletes were required to compete using different equipment than used in training sessions), personal equipment (some athletes owned top-of-the-line racing wheelchairs, while others used heavier, less mobile standard chairs), and arousal factors (increased arousal could result in increased reflex activity for some athletes).

CONCLUSIONS

The results of this study revealed four issues which deserve consideration in future investigations of the attributions of disabled athletes: (a) use of a variety of attributions seemed to be associated with the relative inexperience of disabled athletes in competitive sport; (b) athletes with cerebral palsy used more external attributions than expected, perhaps due to the nature of their disability; and (c) additional attribution choices are needed in research with these athletes to help explain external factors such as classification into disability levels, personal and athletic equipment, and arousal factors.

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Figure 1

Locus of Control and Stability Characteristics
of Attribution Statements

	Stable	Unstable
Internal	I performed well because of my ability. I have special skills for this task. I used the right strategy.	I tried hard. I was physically ready. I was mentally ready. I perform well in these situations.
External	I spent a lot of time working on my skills.	I was lucky. I was able to meet the challenge.

Table 1. Subject Characteristics

Class	Classification Parameters	Males	Females
1	Uses motorized wheelchair. Severe involvement in all four limbs.	15	4
2	Propels wheelchair with feet and/or very slowly with arms. Severe to moderate involvement in all four limbs.	25	12
3	Propels wheelchair with short, choppy arm pushes. Moderate involvement in three or four limbs and trunk.	10	4
4	Propels wheelchair with forceful, continuous arm pushes. Involvement of lower limbs only. Good strength in trunk and upper extremities.	4	4
5	Ambulates without wheelchair but typically uses assistive devices (crutches, canes, walkers). Moderate to severe spastic hemiplegia or paraplegia.	12	8
6	Ambulates without assistive devices, but has obvious balance and coordination difficulties. Moderate to severe involvement of three or four limbs.	19	7
7	Ambulates well but with slight limp. Moderate to mild spastic hemiplegia or paraplegia.	10	5
8	Runs and jumps freely without noticeable limp. Exhibits obvious, although minimal, coordination problems.	3	5
		98	49

Table 2. Means and Standard Deviations for Attributions by Competition Classification

	Class 1 (n = 14)	Class 2 (n = 27)	Class 3 (n = 12)	Class 4 (n = 7)	Class 5 (n = 17)	Class 6 (n = 20)	Class 7 (n = 13)	Class 8 (n = 7)
I was physically ready.	6.64 (2.37)	6.44 (2.82)	7.58 (1.78)	6.29 (2.87)	6.88 (2.52)	6.50 (2.74)	7.46 (2.15)	6.86 (1.77)
I was mentally ready.	7.07 (2.20)	6.48 (2.67)	7.58 (1.83)	6.86 (2.97)	7.53 (1.62)	6.90 (2.07)	8.08 (1.19)	7.00 (2.16)
I used the right strategy.	6.43 (2.65)	6.15 (2.74)	7.50 (1.78)	7.00 (2.08)	6.71 (2.31)	7.54 (2.81)	7.14 (1.85)	6.76 (2.27)
I was lucky.	4.50 (2.82)	3.48 (2.72)	3.67 (3.45)	3.29 (2.14)	3.88 (2.76)	5.00 (2.99)	4.00 (2.77)	3.86 (1.95)
I tried hard.	7.21 (2.42)	7.19 (2.53)	8.58 (1.16)	8.00 (1.15)	7.71 (2.20)	7.65 (2.21)	7.77 (2.24)	7.42 (2.15)
I performed well because of my ability.	5.36 (2.79)	5.89 (2.90)	8.33 (1.23)	5.42 (3.31)	7.35 (1.66)	6.20 (2.17)	7.69 (1.55)	7.00 (1.83)
I perform well in these situations.	4.36 (2.10)	6.00 (2.30)	7.17 (1.90)	7.00 (1.83)	7.35 (1.77)	6.10 (2.45)	7.85 (0.99)	7.57 (1.72)
I was able to meet the challenge.	5.50 (2.53)	6.96 (2.82)	7.83 (1.70)	4.43 (2.70)	7.53 (1.55)	6.25 (2.95)	7.46 (1.94)	7.14 (2.61)
I spent a lot of time working on my skills.	7.29 (2.27)	6.04 (3.01)	8.42 (1.00)	6.71 (2.87)	6.59 (2.67)	7.35 (2.50)	8.85 (0.38)	6.71 (2.63)
I enjoy competition.	8.21 (1.48)	8.11 (1.69)	8.42 (1.16)	8.43 (0.98)	7.94 (2.46)	8.35 (1.27)	8.46 (1.39)	8.71 (0.49)
I have special skills for this task.	5.29 (2.49)	6.26 (2.64)	7.92 (1.56)	5.29 (2.63)	6.47 (2.87)	6.75 (2.10)	7.23 (2.17)	7.29 (1.80)

Table 3. Means and Standard Deviations for Attributions to Objectively-Defined Winning and Losing

	Winners		Losers	
	(n = 45)		(n = 59)	
I was physically ready.	7.67	(1.98)	6.36	(2.56)
I was mentally ready.	7.36	(2.14)	6.86	(2.21)
I used the right strategy.	7.76	(1.94)	6.10	(2.58)
I was lucky.	4.33	(2.93)	3.69	(2.55)
I tried hard.	8.07	(1.54)	7.42	(2.35)
I performed well because of my ability.	7.62	(1.77)	5.93	(2.61)
I perform well in these situations.	7.31	(1.62)	6.00	(2.37)
I was able to meet the challenge.	7.91	(1.69)	5.93	(2.80)
I spent a lot of time working on my skills.	7.33	(2.47)	7.25	(2.34)
I enjoy competition.	8.62	(1.05)	8.05	(1.74)
I have special skills for this task.	7.44	(1.84)	6.07	(2.55)

Subjects responded to attributions using a 9-point Likert-type scale on which 1 corresponded to "Not at all a reason" and 9 corresponded to "Very much a reason."

Table 4. Means and Standard Deviations for Attributions to Subjectively-Defined Success and Failure

	Satisfied Winners (n = 26)		Satisfied Losers (n = 18)		Dissatisfied Winners (n = 2)		Dissatisfied Losers (n = 20)	
I was physically ready.	7.96	(1.82)	7.50	(1.72)	9.00	(0.00)	5.30	(3.08)
I was mentally ready.	7.31	(2.24)	7.89	(2.37)	8.00	(0.00)	6.55	(2.42)
I used the right strategy.	8.54	(0.81)	8.11	(2.05)	4.50	(4.95)	5.00	(2.47)
I was lucky.	4.54	(2.98)	3.78	(2.80)	3.50	(3.54)	3.10	(2.67)
I tried hard.	8.31	(1.35)	8.39	(1.65)	7.50	(0.71)	6.45	(2.80)
I performed well because of my ability.	7.69	(1.98)	7.89	(1.68)	7.50	(0.71)	3.70	(2.25)
I perform well in these situations.	7.27	(1.56)	7.78	(1.17)	8.00	(0.00)	4.50	(2.50)
I was able to meet the challenge.	8.23	(0.99)	8.17	(1.47)	5.00	(1.41)	3.95	(2.80)
I spent time working on my skills.	7.42	(2.61)	8.17	(1.50)	7.00	(1.41)	6.40	(2.72)
I enjoy competition.	8.42	(1.33)	8.67	(0.59)	9.00	(0.00)	7.35	(2.25)
I have special skills for this task.	7.50	(1.48)	6.94	(3.06)	8.00	(1.41)	5.65	(2.30)

Subjects responded to attributions using a 9-point Likert-type scale on which 1 corresponded to "Not at all a reason" and 9 corresponded to "Very much a reason."

APPENDIX K: POST-COMPETITIVE COPING STRATEGIES OF ELITE PHYSICALLY HANDICAPPED ATHLETES

Presented to the North American Society for the
Psychology of Sport and Physical Activity

POST-COMPETITIVE COPING STRATEGIES OF ELITE PHYSICALLY HANDICAPPED ATHLETES

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Abstract

Recent research has identified many factors that may cause stress in athletes, e.g., worry about doing well; criticism from parents, coaches or peers; or fear of injury. While many sport psychologists are encouraging athletes and coaches to use psychological skills training to aid athletes in coping with pre-game anxiety and anxiety experienced in critical game situations, little is known about how athletes cope with post-game stress associated with performance satisfaction, the competition itself, and winning and losing. Coping successfully with these post-game stressors may be critical to the athletes' persistence in sport. Folkman and Lazarus (1985) proposed that coping is a dynamic process potentially involving two functions: use of coping strategies (e.g., confrontive, distancing, self-controlling, seeking social support, accepting responsibility, escape-avoidance, problem solving and positive reappraisal) to regulate distressing emotions; and/or to alleviate the problem causing the distress. The purpose of this research was to identify the coping strategies used by physically handicapped athletes following their performances at a national competition and to relate these coping strategies to persistence. Subjects were 138 volunteer athletes from all competitive classifications in the 1985 National Cerebral Palsy/Les Autres Games. Post-game data were collected to assess athletes' level of satisfaction with their performances, self-ratings of performance, and coping strategies using Folkman and Lazurus' Ways of Coping-Revised. Descriptive results indicated that athletes used problem-solving and positive reappraisal strategies the most. Coping strategies were then analyzed in relation to post-game stressors, i.e., satisfaction with performance, perceived stressfulness of competition, objective outcome (win-loss), and expectations to persist in sports. Results of the discriminant analysis for performance satisfaction revealed that dissatisfied performers engaged in significantly more accepting responsibility and seeking social support strategies; whereas, satisfied and very satisfied performers used more self-controlling and problem solving strategies. Results of the discriminant analysis for perceived stress of the competition were marginally significant. Athletes who reported the competition to be either very stressful or not at all stressful employed the coping strategy of accepting responsibility more than athletes who rated the competition as average or somewhat stressful. Results of the discriminant analysis for winners and losers were marginally significant. Winners engaged in more problem solving strategies while losers engaged in more escape-avoidance and positive reappraisal strategies. Finally, regression analysis identified escape-avoidance and positive reappraisal as the coping strategies which best predicted persistence in future sporting events. The implications of these coping strategies on future performance of both physically handicapped and able-bodied athletes were discussed.

Introduction

Competitive stress is the negative emotional reaction athletes feel when their self-esteem is threatened. Recent research with elite athletes, particularly wrestlers, has identified many sources of pre-event stress, e.g., worrying about performing up to one's level of ability, improving on the last performance, participating in championship meets, losing, and not performing well (Gould, Horn & Spreeman, 1983). In addition, sources of post-event stress have been identified, most notably, losing (Scanlan & Lewthwaite, 1984; Bump, Gould, Petlichkoff, Peterson & Leven, 1985). Regardless of the source of stress, it is important to understand how these stressors impact performance and how athletes cope with these stressors. If athletes are not effective in controlling pre-event stress or successfully coping with either event outcome or performance demands, they may choose to drop out of sport or not persist at the more elite levels in order to maintain self-esteem.

The purpose of this research was to investigate the actual coping strategies that disabled athletes use to manage the demands of stressful events. Lazurus and Folkman (1985) have proposed a cognitive-phenomenological theory of stress and coping which identifies the processes of cognitive appraisal and coping as the critical mediators of stressful person-environment relationships. Specifically, cognitive appraisal is a process through which the person evaluates whether a particular encounter with the environment is relevant to his/her well-being or self-esteem. Coping is defined as the person's changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as exceeding a person's resources.

Coping strategies are depicted as emotion-focused or problem-focused. Choice of strategy is related to appraisal of the threat, harm, or challenge involved in the stress situation. The coping process is characterized by an individual's responses to the phases of a stressful encounter, namely, anticipation, waiting for the results, and dealing with outcome (Lazurus & Folkman, 1985). Research has identified eight coping strategies typical among adults who cope with various life stresses and of college students coping with exam stress. These strategies are seeking social support, distancing, positive reappraisal, confrontation, escape-avoidance, self-controlling, problem solving, and accepting responsibility. Characteristics of these coping strategies are presented in Table 1.

A particularly rich environment for investigating coping strategies is with athletes with physical disabilities. Successful participation in sport may result in greater quality of life, confidence, and personal satisfaction. How these athletes cope with both the limited control over their physical responses and the stress associated with competing in a highly visible achievement activity, such as sport, is a concern of both rehabilitation and sport psychologists. Thus, the aim of this research was to identify those coping strategies that result in persistence in an achievement domain.

Method

Subjects. Subjects for this study were 138 athletes with cerebral palsy and specific other physical disabilities (e.g., short stature and muscular dystrophy) who participated in the 1985 National Cerebral Palsy/Les Autres Games. Athletes were volunteers who ranged in age from 18-66 years. Sixty-three percent of the subjects were males. Most athletes characterized their disabilities as non-progressive (93%) and stable (62%). Most (78%) had acquired their disability congenitally.

Procedures. Demographic data were obtained from a questionnaire mailed to the athletes prior to the start of the Games. Preferred coping strategies were assessed at the Games following the athlete's event using the Ways of Coping-Revised (Lazurus & Folkman, 1985). Additionally, post-event data were collected to assess athletes' levels of satisfaction with their performances, event outcomes, the degrees of stress experienced during the Games, and the likelihood of continuing to participate in sport.

Results

What coping strategies were used? Descriptive statistics revealed that athletes employed each of the eight coping strategies. Coping strategies were rated on a 4-point Likert-type scale ranging from 0 (does not apply) to 3 (used a great deal). Means and standard deviations for coping strategy scores for all athletes are contained in Table 2. Escape-avoidance and confrontive coping strategies were used "a little" compared to the others which were used "a little" to "somewhat." Planful problem solving and positive reappraisal were used most often.

Did satisfied performers use different coping strategies than dissatisfied performers? Satisfaction with performance was originally assessed on a 9-point Likert scale. For purposes of analysis, satisfaction with performance was derived using the mean and ± 1 standard deviation as the middle group. The three groups and their original scale scores were dissatisfied (1-4), satisfied (5-7), and very satisfied (8-9). Table 3 contains the means and standard deviations for each coping strategy by levels of satisfaction. A discriminant function analysis was performed to determine if differing coping strategies were used by these groups of athletes. One significant function was found, $\chi^2_8 = 21.02$, $p < .01$. Dissatisfied performers were discriminated from satisfied and very satisfied performers by use of self-controlling, seeking social approval, accepting responsibility, and planful problem solving strategies. Specifically, dissatisfied athletes engaged in more accepting responsibility and seeking social support strategies. This function correctly classified 44.8% of the cases.

Did athletes who found the Games more stressful employ different coping strategies than those who found the Games less stressful? Athletes were asked to rate the amount of stress experienced at the Games on a 4-point Likert scale ranging from 1 (very stressful) to 4 (not at all stressful). A discriminant function analysis revealed a marginally significant finding, $\chi^2_3 = 7.41$, $p < .06$. Accepting responsibility was the only discriminating strategy. Those athletes who found the Games very stressful and not at all stressful used this strategy more than those who rated the Games as average or somewhat stressful. Table 4 contains the means and standard deviations for coping strategies and levels of stress.

Do winners and losers cope differently with the event outcome? Winners were defined as medalists in their events, namely, 1st, 2nd, or 3rd place finishers, and losers were operationally defined as non-medalists. Results of the discriminant function analyses were marginally significant, $\chi^2_3 = 7.16$, $p < .10$. Winners used more planful problem solving strategies, while losers engaged in more escape-avoidance and positive reappraisal strategies. Even though marginally significant, the function correctly classified 55.7% of the athletes.

Are certain psychological variables and coping strategies associated with the likelihood of persistence in sport? To answer this question, a stepwise multiple regression was run with persistence as the criterion variable and level of satisfaction with performance, level of stress experienced at the Games, objective outcome, and the eight coping strategies as the predictor variables. The only variables to enter the equation were positive reappraisal and escape-avoidance, which was negatively correlated with persistence. Together these variables accounted for 16% of the total variance. The full regression equation was: persistence = 1.3869 + (-.45) escape-avoidance + (.26) positive reappraisal. Care must be taken in interpreting these results, as 75% of the athletes responded that they were very likely to persist in sport. These results do suggest that athletes who are likely to persist employ positive reappraisal coping strategies more and escape-avoidance less than those who are likely not to persist.

Discussion

As proposed, a link does exist between persistence in sport and coping strategies used by disabled athletes. Eight coping strategies were employed by these athletes to cope with failure, perceived stress associated with the National Games, and dissatisfaction with game performance. However, not all coping strategies were used equally. Problem solving and positive reappraisal were used most often by these athletes. Although coping strategies should not be perceived as good or bad, problem solving and positive reappraisal may represent more purposeful methods for coping with stressful situations, including stress associated with performance in sport.

One source of post-game stress is dissatisfaction with performance, particularly at a national competition. It was interesting to note that dissatisfied performers employed more accepting responsibility and seeking social support strategies. In other words, these athletes lectured themselves, and made promises to themselves that things would be different next time (accepting responsibility) or talked to others about their performances and accepted, perhaps even sought, sympathy from others (social support). These strategies may be useful in the more immediate situation, but are not as purposeful in determining a course of action for the next experience. Satisfied performers employed a problem solving strategy, which may relate to their being more satisfied.

Participation in a national sport competition can be stressful. How well athletes cope with both the stress related to competition and the stress of being in a strange environment waiting to perform may impact upon desire to compete at this higher level. Athletes who reported that the Games were either very stressful or not at all stressful employed a coping strategy of accepting responsibility more than those who reported somewhat to average levels of stress. Although this result is incongruous with our expectations, the small number (n = 9) who found the Games not at all stressful may have led to this distinction. More research is needed to understand this result.

Of particular interest was the result that winners and losers coped the event outcome differently. Winners engaged in planful problem solving, such as drawing on past experiences, to explain their successes (a 1st, 2nd, or 3rd place finish) whereas losers (4th place or greater finish) engaged in escape-avoidance, i.e., wishing the situation had been different, and positive reappraisal. More research is needed to understand if these are short-term coping strategies that are only employed initially after a disappointment. It may be that athletes who lose at a national competition employ different strategies to cope with the loss initially and then change to a more purposive strategy such as problem solving later.

The relationship of coping strategies and sources of stress to persistence in sport was most interesting. The fact that reported levels of stress, event outcome, and satisfaction with performance did not help to explain persistence in sport, but that two coping strategies were related to persistence, was particularly revealing. These results suggest that sport psychologists, coaches, and athletes need to be aware of the coping strategies employed by athletes. Athletes who persist in their use of escape-avoidance strategies may be more likely to drop out or to be content with performance at lower levels of competiton. Athletes who can find something good about themselves based on their experiences are more likely to persist. This latter finding suggests support for focusing on performance rather than outcome. Again, more research is needed to understand how athletes cope with post-game stressors and how sport psychologists can facilitate use of more productive coping strategies by athletes.

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Table 1

Characterization of Coping Strategies

Coping Strategies
CONFRONTIVE COPING (6 items): e.g., "Stood my ground and fought for what I wanted;" "I expressed my anger to the person(s) who caused the problem."
DISTANCING (6 items): e.g., "Made light of the situation, refused to get too serious about it;" "Went along with fate, sometimes I just have bad luck."
SELF-CONTROLLING (7 items): e.g., "Tried to keep my feelings to myself;" "I went over in my mind what I would say or do."
SEEKING SOCIAL SUPPORT (6 items): e.g., "Talked to someone to find out more about the situation;" "Accepted sympathy and understanding from someone."
ACCEPTING RESPONSIBILITY (4 items): e.g., "Criticized or lectured myself;" "I made a promise to myself that things would be different next time."
ESCAPE-AVOIDANCE (8 items): e.g., "Wished that the situation would go away or somehow be over;" "Tried to make myself feel better by eating, drinking, smoking, using drugs or medication."
PLANFUL PROBLEM SOLVING (6 items): "I made a plan of action and followed it;" "Drew on my past experiences;" "Just concentrated on what I had to do next - the next step."
POSITIVE REAPPRAISAL (7 items): "I came out of the situation better than I went in;" "Found new faith;" "I changed something about myself.

Table 2

Means and Standard Deviations for Coping Strategies

Coping Strategies	M	SD
Planful problem solving	1.82	.60
Positive reappraisal	1.66	.68
Self-controlling	1.49	.56
Seeking social support	1.46	.67
Accepting responsibility	1.41	.68
Distancing	1.36	.55
Confrontive coping	1.08	.59
Escape-avoidance	0.88	.59

Table 3

Means and Standard Deviations for Coping Strategies and Satisfaction with Performance

	Satisfaction with Performance					
	Dissatisfied (n = 27)		Satisfied (n = 51)		Very Satisfied (n = 55)	
Coping Strategies	M	SD	M	SD	M	SD
Planful problem solving	1.53	.52	1.80	.53	2.01	.61
Positive reappraisal	1.50	.67	1.69	.66	1.78	.69
Seeking social support	1.49	.64	1.47	.73	1.48	.63
Accepting responsibility	1.41	.69	1.40	.66	1.45	.70
Self-controlling	1.29	.52	1.54	.54	1.59	.54
Distancing	1.23	.58	1.35	.54	1.38	.60
Confrontive coping	0.96	.47	1.09	.62	1.15	.57
Escape-avoidance	0.94	.55	0.86	.62	0.85	.60

Table 4

Means and Standard Deviations for Coping Strategies and Level of Stress Experienced

	Level of Stress							
	Very (n = 34)		Average (n = 66)		Somewhat (n = 29)		Not at all (n = 9)	
Coping Strategies	M	SD	M	SD	M	SD	M	SD
Planful problem solving	1.92	.60	1.80	.55	1.71	.65	1.91	.75
Positive reappraisal	1.80	.66	1.61	.69	1.63	.69	1.68	.72
Accepting responsibility	1.67	.70	1.31	.68	1.30	.61	1.50	.67
Self-controlling	1.59	.46	1.49	.59	1.39	.55	1.40	.63
Seeking social support	1.53	.70	1.41	.68	1.55	.60	1.35	.70
Distancing	1.45	.58	1.34	.51	1.30	.60	1.33	.51
Confrontive coping	1.20	.61	0.99	.59	1.09	.42	1.31	.84
Escape-avoidance	0.98	.67	0.88	.58	0.75	.45	0.97	.76

Table 5

Means and Standard Deviations for Coping Strategies and Winners and Losers

	Winners (n = 53)		Losers (n = 57)	
Coping Strategies	M	SD	M	SD
Planful problem solving	1.90	.63	1.75	.56
Positive reappraisal	1.61	.67	1.76	.71
Seeking social support	1.53	.64	1.47	.67
Self-controlling	1.50	.58	1.50	.52
Accepting responsibility	1.35	.67	1.41	.62
Distancing	1.31	.59	1.34	.54
Confrontive coping	1.11	.57	1.06	.53
Escape-avoidance	0.77	.57	0.91	.58

APPENDIX L: COPING STRATEGIES OF PERSONS WITH PHYSICAL DISABILITIES IN SPORT

Presented to the American Psychological Association

COPING STRATEGIES OF PERSONS WITH PHYSICAL DISABILITIES IN SPORT

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ABSTRACT

This study is based on the assumption that persons with disabilities who participate and persist in achievement situations are more likely to experience the benefits of full participation in society. Competitive sport is a typical domain in which individuals learn to achieve these benefits, including competence and self-worth. The purpose of this research was to study the disability coping status and coping strategies of disabled individuals involved in competitive sport and to identify the coping factors that distinguish individuals most likely to benefit from and continue participation.

Subjects were 181 disabled athletes who competed in the 1985 National Cerebral Palsy/Les Autres Games. Demographic data and disability coping status (Coping with Disability Inventory, CDI) were assessed by mail prior to the Games. Post-event data including coping strategies (Ways of Coping-Revised) and perceived benefits of participation were collected at the conclusion of the Games.

Based on CDI scores, four subgroups of athletes were created: High Copers, n = 30, Good Copers, n = 65, Fair Copers, n = 49, and Low Copers, n = 37. Disability coping status was not related to severity of impairment or demographic characteristics. Higher level copers were more likely to be involved in work or school than lower level copers. All groups used a variety of coping strategies, with planful problem solving and positive reappraisal used most frequently. Higher level copers used coping strategies more frequently than lower level copers. All athletes reported positive benefits of participation; no difference in outcomes were found for different disability coping status groups.

A significant main effect for persistence was found. Regardless of disability coping status, athletes most likely to persist in sport used planful problem solving and positive reappraisal as coping strategies. The interaction of disability coping status and perceived stress with coping strategies was significant, but results were not directly interpretable.

The discussion focused on the characteristics of disability coping status in relation to participation and persistence in sport. Also discussed were the implications of the utilization of coping strategies in promoting effective participation in future achievement situations such as sport, school, and work.

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INTRODUCTION

This study is based on the assumption that persons with disabilities who participate and persist in achievement situations are more likely to experience the benefits of full participation in society. Individuals with disabilities are under-represented in the achievement domains of employment, income, education, and recreation (Harris, 1986) and thus may have fewer opportunities to derive the related benefits. Little research has documented the characteristics of disabled individuals who competently participate and persist in normal situations (Blom, 1980), even though these are the intended goals and outcomes of rehabilitation services.

Competitive sport is a typical domain in which individuals learn how to achieve these benefits, including enhanced feelings of competence and self-worth (Verhoff, 1969). In fact, the aims of the National Association of Sports for Cerebral Palsy (NASCP) are to assist people to enter a positive process of (a) improving functional abilities, (b) accepting challenge, (c) learning to win and lose, (d) contributing to a team effort, (e) developing self-esteem, (f) extending social experiences, and (g) preparing for competitive activities found in independent living.

Coping is the central construct of interest in this study both in relation to mitigating the ongoing stress of disability and the situational stress of competition. Stressful situations are presumed to occur as a normal but taxing aspect of life with a disability and of participation in situations of risk. Persons who cope successfully with disability, with the stress and frustration of competition, and who are motivated to achieve may be more likely to participate in other, similar situations such as work and independent living.

Shontz (1975) describes disability as a stress condition that requires coping responses. Individuals described as effectively coping with disability report a positive quality of life, social competence, and acceptance of disability (Blom, Ek, & Kulkarni, 1983). Blom and Kulkarni conceived of coping as an ongoing process which changes according to individual development and situational context. They developed the Coping with Disability Inventory (CDI) (Kulkarni & Blom, 1985), an 80-item 4-point rating scale questionnaire, to assess the current disability coping status of an individual including coping processes and quality of life outcomes.

From a situational perspective, Lazarus and Folkman (1985) define coping as the person's changing cognitive and behavioral efforts to manage external and/or internal demands that are perceived to exceed one's resources. Hence, coping involves evoking strategies to meet the demands of a stressful encounter, based on the individual's appraisal of the threat, harm, or challenge involved. Coping includes the individual's changing responses to phases of the stressful encounter, namely anticipation, waiting for results, and dealing with outcome. Lazarus and Folkman have depicted strategies as primarily emotion-focused or problem-focused and devised the Ways of Coping-Revised inventory to assess use of specific strategies by individuals in various situations. Studies of adults dealing with typical midlife stressors and of college students dealing with exam stress have identified eight coping strategies: seeking social support, distancing, positive reappraisal, confrontation, escape-avoidance, self-controlling, problem solving, and accepting responsibility (Folkman & Lazarus, 1985).

The purpose of this research was to study the disability coping status and coping strategies of individuals involved in competitive sport and to determine their relationship to positive outcomes of participation. In addition, coping factors that discriminate those individuals most likely to benefit from and continue participation were of interest.

METHOD

Subjects

Subjects for this study were 181 athletes with cerebral palsy or other specified physical disabilities (e.g., short stature, muscular dystrophy) who competed in the 1985 National Cerebral Palsy/Les Autres Games. Events at the Games included archery, basketball, boccia, bowling, cross country, cycling, golf, equestrian, powerlifting, slalom, soccer, swimming, table tennis, track and field, and wheelchair soccer. Study participants were volunteers over the age of 18 (range 18-66 years). The sample consisted of more males (64%) than females (37%). Most athletes characterized their disabilities as nonprogressive (93%) and stable (62%). Most (78%) had acquired their disabilities congenitally.

Procedures

Demographic data and disability coping status were obtained from questionnaires mailed to athletes prior to the start of the Games. Disability coping status was assessed using the Coping With Disability Inventory (CDI) (Kulkarni & Blom, 1985). To ascertain how athletes dealt with the stress of the Games, preferred coping strategies were assessed at the conclusion of the Games using the Ways of Coping-Revised (Lazarus & Folkman, 1985). Additional post-event data were collected to assess athletes' perceptions of their participation including (a) satisfaction with performance, (b) level of stress experienced at the Games, and (c) likelihood of continued participation (persistence) in sport.

RESULTS

What disability coping status had these athletes achieved prior to this competition?

The mean CDI score for these athletes was 287.5 (SD = 28.6), of a possible 400 points, which is classified as moderately high coping. The group's score is similar to reported means for a sample of adults involved in independent living centers (Mean = 283.5, SD = 27.3). However, individual mean scores on the CDI ranged from 182 to 353, indicating considerable variability among athletes in disability coping status. Thus the distribution of scores was used to form subgroups of athletes with similar disability coping status in order to more effectively analyze the relationship of coping with disability to other variables of interest. Using the total group mean as the average score, four subgroups were created at -2, -1, +1, and +2 standard deviations from the mean. The CDI scores for the subgroups are presented in Table 1. Group 1 included 31 athletes classified as "low copers." Group 2 included 49 athletes classified as "fair copers," Group 3 included 65 "good copers," and Group 4 included 30 "high copers."

What are the relationships of demographic characteristics to disability coping status?

Age. Results of a one-way ANOVA for age and disability coping status groups were significant, $F_{3,177} = 3.14$, $p < .05$. A Scheffe multiple range follow-up test revealed that Group 2 (fair copers) differed significantly in age from the other groups (see Table 1). Practically speaking, the mean age differences among the groups was not notable. Two outliers (ages 59 and 66) appear to account for the difference as reflected by the larger SD for this group.

Gender. Disability coping status did not differ for females and males. Results of a one-way ANOVA were not significant, $F_{1,179} = 0.35$, $p > .05$. However, the tabled proportions of males and females for each coping status group are interesting in that Group 2 (the older group) contains a relatively lower proportion of males (59%), and Group 4 (high copers) has a relatively higher proportion of males (73%) than does the total sample (64%).

Competition classification. The categories used for classifying athletes into levels of competition according to their functional impairments are summarized in Table 2. Disability coping status did not differ for the various classification levels. Results of a one-way ANOVA were not significant, $F_{3,150} = 1.33$, $p > .05$. In fact, the tabled mean scores suggested that disability coping status scores were slightly higher for the more severe impairment groups, although no consistent linear pattern was observed.

Education. No differences in the mean CDI scores were found in a one-way ANOVA among individuals who had achieved different levels of education, $F_{7,164} = 0.35$, $p > .05$.

Employment/school status. Individuals involved in full or part time work or school were grouped together as "productively involved" and those not involved in school or work as "not productively involved". A 2 X 4 chi-square analysis for status and level of coping was significant, $X^2_3 = 8.77$, $p < .05$. Approximately two-thirds of the athletes were productively involved in either school or work. Most (77%) of the high copers were productively involved, whereas only 44% of the low copers were productively involved.

What is the relationship between disability coping status and the perceived outcomes of participation in the Games?

Perceived stress of competition. Athletes were asked to rate the amount of stress experienced at the Games on a 4-point rating scale ranging from 1 (very stressful) to 4 (not at all stressful). A one-way ANOVA of mean stress ratings for the four disability coping status groups was not significant, $F_{3,148} = 0.71$, $p > .05$.

Satisfaction with performance. Athletes were asked to rate their satisfaction with performance on a 9-point rating scale. Groups of subjects were formed on the basis of ±1 standard deviation from the mean. Groups included disatisfied (1-4), satisfied (5-7), and very satisfied (8-9) athletes. A one-way ANOVA of satisfaction rankings for the coping with disability score was not significant, $F_{2,153} = 0.62$, $p > .05$.

Likelihood of persistence in sport. Athletes were asked to rate the likelihood that they would continue to participate in competitive sport (persistence) on a 4-point rating scale. Almost all (76%) athletes described themselves as very likely to continue. Only 3 individuals indicated that they would not continue to participate in sport. In a one-way ANOVA, no significant relationship between these expectations and coping with disability score was found, $F_{3,148} = 0.47$, $p > .05$. Despite the skewed distribution, the mean scores showed a trend of a linear, positive relationship such that higher probability persisters were more likely to be higher level copers.

What coping strategies did the athletes use to cope with the stress of the Games?

Coping strategies were rated on a 4-point rating scale ranging from 0 (does not apply) to 3 (used a great deal). Means and standard deviations for coping strategy scores for all athletes and for each disability coping status group are presented in Table 3. Descriptive statistics revealed that athletes employed each of the eight coping strategies, with high copers using all strategies more often. Regardless of disability coping status, the most frequently used strategies were planful problem solving and positive reappraisal. Escape-avoidance was least often used by all groups.

Is there a relationship between disability coping status, the outcomes of participation, and the coping strategies used?

Persistence (likelihood of continued participation). Results of a 4 X 4 (persistence by CDI status) MANOVA revealed a non-significant interaction of disability coping status and persistence, $F_{64,1018} = 1.22$, $p > .05$, a significant main effect for persistence, $F_{24,383} = 1.93$, $p < .01$, and no significant main effect for disability coping status, $F_{24,383} = 1.05$, $p > .05$. The follow-up test of the persistence main effect revealed two significant discriminant functions: (a) $X^2_{18} = 45.7$, $p < .01$, accounting for 16% of the variance; and (b) $X^2_{10} = 18.68$, $p < .05$, accounting for 9% of the variance. The means for coping strategies are reported in Table 4. The most discriminating variables, presented with their discriminant function coefficients, were (.85) escape-avoidance, (-.56) positive reappraisal, (.40) self-controlling, (-.38) planful problem solving, (.27) seeking social approval, and (-.06) accepting responsibility. Function 1 suggested that athletes who plan to persist in competitive sport are more likely to use planful problem solving and positive reappraisal as coping strategies regardless of their disability coping status. Function 2 discriminated the potential dropouts from the more persistent athletes, and may have resulted from the small number ($n = 4$) of potential dropouts.

Stress of participation. A 4 X 4 (stress X CDI status) MANOVA with coping strategies revealed a significant interaction of disability coping status and level of stress experienced at the Games, $F_{72,1010} = 1.44$, $p < .05$. Main effects for stress and CDI group were not statistically significant: stress, $F_{24,380} = 0.97$, $p > .05$ and CDI group, $F_{24,380} = 1.00$, $p > .05$. Means and standard deviations for the 16 groups and coping strategies are presented in Table 5. The discriminant function analysis follow-up for the stress level and CDI group interaction resulted in one significant function, $X^2_{75} = 113.6$, $p < .01$, accounting for 25% of the variance. The most discriminating variables and their discriminant function coefficients were (-.87) planful problem solving, (.68) confrontive coping, (.54) positive reappraisal, (.26) self-controlling, and (.22) accepting responsibility. Unfortunately, with 16 groups, many with a small number of subjects, the results are difficult to interpret.

DISCUSSION

The athletes in the study, as a group, can be characterized as coping well with disability and persistent in their efforts to achieve. As hypothesized, those who cope more effectively with disability are also more likely to participate in other achievement domains (work, school).

Disability coping status was not found to be a function of demographic characteristics (age, gender, education). The greater representation of males in the Games and among the high copers, although not statistically significant, may reflect societal differences for male participation in achievement situations irrespective of disability.

As hypothesized, no differences were found in the impairment classifications among the subgroups of disability coping status. Thus, coping with disability was not related to the severity of functional impairment. This finding supports prior research that there is no positive direct correlation between extent of psychological adjustment and severity of disability.

In this study, no direct relationship was demonstrated between disability coping status and the perceived outcomes (stress, satisfaction, and persistence) of sport participation. One might expect that persons who report higher global coping status may also report more positive outcomes in specific stress situations. Since the group had a positively skewed distribution on outcome variables, this relationship may not have been adequately tested. On the other hand, factors related to individual outcomes in the specific situational aspects of sport competition may have little relation to the more global, stable assessment of disability coping status.

As White (1985) points out, coping refers to efforts to master conditions of harm, threat, or challenge when a routine or automatic response is not readily available. Hence, specific environmental demands must be met with new behavioral solutions or old solutions that are adapted to meet the current situation. In this case, coping may mean dealing with specific demands of the sport situation and may transcend disability related coping responses.

According to Monat and Lazarus (1985), assessment of general coping styles has limited generalizability and hence is a poor predictor of behavior in any given situation. It appears that disability coping status as measured by the CDI may indicate these more general processes of coping in relation to ongoing stress of disability and have little relation to the specific sport environment, except to indicate a prerequisite level of personal adjustment for participation at all.

Interpretation of coping strategies should be kept in mind as characteristics of a group of moderately high copers and high persisters. The strategies these athletes use most, planful problem solving and positive reappraisal, are characterized by optimistic thought and intention. In planful problem solving, individuals engage in actions or thoughts directed toward the immediate situation or an anticipated situation. This direct problem-focused strategy would be a requisite for long-term coping in which the stressful situation must eventually be faced. In positive reappraisal, individuals emphasize or rationalize a perceived personal benefit or gain of participation irrespective of the objective outcome. This reframing is important for sustaining satisfying participation in competitive situations where only few individuals achieve the objective status of winner. Athletes rely least often on the defensive and withdrawing strategy of escape-avoidance or on confrontive coping, where an external approach to the cause/situation is used.

Athletes with higher disability coping status use all types of strategies (i.e., internal, emotion-focused, defensive, problem-focused) more often than other athletes. Thus high level copers have greater flexibility (behavioral, cognitive, and affective) and access to a wider response repertoire that assists their coping process.

Athletes used both approach and avoidance oriented strategies, which is characteristic in the dynamic process of coping with stress. As Roth and Cohen (1986) point out, measured use of avoidant strategies can sustain hope and courage over a period of time, particularly in situations of little or no control to alter the outcome or in situations with an immediate impact of threat. Approach oriented strategies facilitate appropriate action that may ultimately alter the stress situation, improve outcomes in the future, or achieve more satisfactory resolution of affect.

In regards to persistence in sport, the importance of situation coping strategies was more predictive than the more global and perhaps stable measure of disability coping status. This result is encouraging in that while coping with disability may be a more subtle and long term adjustment process, specific coping strategies can be taught and developed. Thus, individuals may be assisted so they can satisfactorally engage in and acquire the benefits of sport participation which may, in turn, promote coping in other life domains. However, since the group consists of moderately high copers, it may be that a prior level of coping must be attained in order to participate at all.

The significant interaction of stress, disability coping status, and coping strategies supports the contention that there is some relation between the global aspect of coping with disability, the experience of stress in competition, and the specific coping strategies used in the situation. The discriminant function appears to involve the use of strategies aimed at personal defense and self control and correlated negatively with planful problem solving. Based on the small cell sizes and high variability, interpretations should be made with caution. However, examination of the tabled mean scores offers some interesting trends. It appears that high copers, both those who report no stress and those who report high stress, use confrontive coping strategies more often than any other groups. Good copers who report no stress have the lowest mean score for use of self controlling strategies, in greatest contrast to high copers who report high stress and use this strategy more than any other group. For both high and low copers, those who report high stress use all coping strategies more often than high and low copers who report no stress.

Further research is necessary to more adequately explore several interesting findings suggested in this study. Specifically, there is a need to consider:

- repeated measures designs to study coping strategies at specific phases in the stressful event to determine the use and efficacy of coping responses at different points in the coping process,
- comparison of disabled athletes to a control disabled sample to assess the impact of sport participation on coping, and
- longitudinal designs to assess whether disability coping status as measured by the CDI is a global, stable characteristic or an evolving process state.

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Table 1

CDI Score and Age Characteristics for Disability Coping Status Subgroups

Disability Coping Status	n	Mean CDI	SD	CDI Range	Mean Age	SD
Low Copers	37	246.6	18.66	182-264	29.5	7.34
Fair Copers	49	276.5	6.49	265-286	32.8	11.58
Good Copers	65	300.7	7.84	287-316	27.8	7.86
High Copers	30	327.1	9.11	317-353	28.3	8.43
Total Group	181	287.5	28.60	182-353	29.6	9.20

Table 2

Distribution of Subjects by Functional Impairment Classification and Disability Coping Status

			Proportion (%) of Disability Coping Status Group				
NASCP Class	Functional Impairment Characteristics	(n)	Low Copers (n = 30)	Fair Copers (n = 38)	Good Copers (n = 59)	High Copers (n = 27)	Coping Score (M and SD)
1	Uses motorized wheelchair. Severe involvement in four limbs.	(20)	0	40	50	10	293.1 (15.1)
2	Propels wheelchair with feet or very slowly with arms. Severe/moderate involvement in four limbs.	(30)	20	13	37	30	296.7 (26.7)
3	Propels wheelchair with short, choppy arm pushes. Moderate involvement in three or four limbs.	(19)	21	32	26	21	284.6 (32.7)
4	Propels wheelchair with forceful, continuous arm pushes. Involvement of lower limbs only.	(12)	8	42	25	25	293.8 (27.8)
5	Ambulates without wheelchair but typically uses assistive devices (crutches, canes, walkers). Moderate/severe spastic hemiplegia or paraplegia.	(24)	25	21	46	8	283.8 (32.1)
6	Ambulates without assistive devices, but has obvious balance and coordination difficulties. Moderate/severe involvement of three or four limbs.	(23)	30	22	39	9	281.7 (30.4)
7	Ambulates well but with slight limp. Moderate/mild spastic hemiplegia or paraplegia.	(15)	27	20	33	20	288.5 (30.8)
8	Runs and jumps freely without noticeable limp. Exhibits obvious, although minimal, coordination problems.	(11)	18	18	46	18	292.5 (32.5)
Mean Classification Level			(4.8)	(3.8)	(4.1)	(3.8)	

Table 3

Means and Standard Deviations for Use of Coping Strategies by Disability Coping Status Groups

	Disability Coping Status Groups				
Coping Strategies	Low Copers (n = 33)	Fair Copers (n = 43)	Good Copers (n = 56)	High Copers (n = 26)	Total (N = 158)
Confrontive Coping	0.94 (0.59)	0.92 (0.63)	1.09 (0.57)	1.13 (0.61)	1.02 (0.59)
Distancing	1.14 (0.47)	1.23 (0.56)	1.26 (0.63)	1.53 (0.60)	1.27 (0.58)
Self-Controlling	1.31 (0.55)	1.44 (0.45)	1.35 (0.64)	1.55 (0.73)	1.40 (0.60)
Seeking Social Support	1.23 (0.64)	1.36 (0.60)	1.45 (0.76)	1.55 (0.67)	1.40 (0.68)
Accepting Responsibility	1.16 (0.58)	1.26 (0.66)	1.26 (0.78)	1.62 (0.82)	1.30 (0.73)
Escape-Avoidance	0.74 (0.59)	0.81 (0.54)	0.72 (0.57)	0.94 (0.76)	0.78 (0.60)
Planful Problem Solving	1.60 (0.62)	1.70 (0.57)	1.86 (0.58)	1.97 (0.67)	1.78 (0.61)
Positive Reappraisal	1.36 (0.65)	1.51 (0.76)	1.70 (0.63)	1.79 (0.86)	1.60 (0.72)

Table 4

Means and Standard Deviations for Use of Coping Strategies by Level of Persistence

	Level of Persistence				
Coping Strategies	Not at all (n = 4)	(n = 13)	(n = 21)	Definitely (n = 120)	Total (N = 158)
Confrontive Coping	0.96 (0.59)	1.20 (0.49)	1.12 (0.64)	1.50 (1.01)	1.02 (0.60)
Distancing	1.29 (0.57)	1.38 (0.65)	1.24 (0.36)	1.71 (0.58)	1.31 (0.57)
Self-Controlling	1.37 (0.61)	1.35 (0.51)	1.74 (0.52)	1.86 (0.26)	1.41 (0.59)
Seeking Social Approval	1.31 (0.73)	1.56 (0.47)	1.67 (0.58)	1.25 (0.91)	1.37 (0.69)
Accepting Responsibility	1.26 (0.74)	1.37 (0.71)	1.48 (0.60)	2.31 (0.63)	1.32 (0.74)
Escape-Avoidance	0.70 (0.58)	0.99 (0.53)	1.26 (0.66)	1.53 (0.40)	0.80 (0.61)
Planful Problem Solving	1.80 (0.60)	1.64 (0.57)	1.67 (0.69)	2.21 (0.63)	1.78 (0.60)
Positive Reappraisal	1.61 (0.72)	1.60 (0.61)	1.40 (0.80)	2.11 (0.87)	1.60 (0.71)

Table 5

Means and Standard Deviations for Use of Coping Strategies by Amount of Stress Experienced and Disability Coping Status Interaction Groups

		Coping Strategies							
Disability Coping Status and Amount of Stress	n	Confrontive Coping	Distancing	Self-Controlling	Seeking Social Approval	Accepting Respon-sibility	Escape-Avoidance	Planful Problem Solving	Positive Reappraisal
Low Copers with									
High Stress	9	0.87 (0.69)	1.09 (0.22)	1.59 (0.46)	1.15 (0.74)	1.08 (0.53)	0.71 (0.46)	1.98 (0.65)	1.27 (0.86)
Moderate Stress	10	0.92 (0.57)	1.43 (0.54)	1.30 (0.42)	1.53 (0.56)	1.25 (0.50)	0.90 (0.80)	1.65 (0.46)	1.47 (0.76)
Little Stress	7	1.26 (0.58)	1.19 (0.46)	1.47 (0.42)	1.38 (0.53)	1.25 (0.52)	0.80 (0.17)	1.40 (0.64)	1.45 (0.42)
No Stress	5	0.67 (0.47)	0.83 (0.42)	0.80 (0.82)	0.70 (0.55)	1.05 (0.96)	0.48 (0.80)	1.23 (0.70)	1.11 (0.49)
Fair Copers with									
High Stress	7	1.43 (0.64)	1.38 (0.46)	1.55 (0.52)	1.33 (0.29)	1.54 (0.71)	0.86 (0.71)	1.88 (0.48)	1.94 (0.54)
Moderate Stress	24	0.77 (0.54)	1.26 (0.49)	1.46 (0.40)	1.30 (0.73)	1.23 (0.73)	0.87 (0.53)	1.70 (0.53)	1.36 (0.71)
Little Stress	9	0.89 (0.35)	1.15 (0.66)	1.29 (0.35)	1.56 (0.92)	1.03 (0.57)	0.65 (0.29)	1.37 (0.53)	1.44 (0.84)
No Stress	2	1.33 (1.89)	1.33 (0.94)	1.21 (1.31)	1.42 (0.82)	1.63 (0.88)	0.94 (1.33)	2.08 (1.06)	1.43 (1.21)
Good Copers with									
High Stress	18	1.05 (0.57)	1.26 (0.74)	1.34 (0.55)	1.54 (0.84)	1.50 (0.73)	0.80 (0.58)	1.80 (0.70)	1.54 (0.67)
Moderate Stress	22	1.29 (0.63)	1.37 (0.52)	1.60 (0.75)	1.55 (0.73)	1.40 (0.77)	0.94 (0.59)	1.97 (0.50)	1.95 (0.51)
Little Stress	9	0.80 (0.34)	1.24 (0.66)	1.05 (0.49)	1.15 (0.88)	0.83 (0.52)	0.25 (0.23)	1.69 (0.60)	1.54 (0.71)
No Stress	5	1.03 (0.43)	1.20 (0.51)	0.86 (0.20)	1.33 (0.39)	0.60 (0.84)	0.50 (0.34)	1.90 (0.57)	1.74 (0.57)
High Copers with									
High Stress	4	1.67 (0.78)	2.17 (0.24)	2.07 (0.25)	1.79 (0.44)	2.38 (0.66)	1.81 (0.95)	1.88 (0.85)	2.57 (0.87)
Moderate Stress	12	0.79 (0.44)	1.29 (0.62)	1.36 (0.81)	1.15 (0.56)	1.17 (0.73)	0.54 (0.52)	1.81 (0.69)	1.44 (0.73)
Little Stress	5	1.30 (0.14)	1.43 (0.65)	1.51 (1.01)	1.90 (0.55)	2.00 (0.64)	0.98 (0.74)	1.50 (0.37)	1.94 (0.85)
No Stress	3	1.50 (1.01)	1.67 (0.44)	1.67 (0.22)	1.61 (0.82)	1.75 (0.66)	1.21 (0.75)	1.89 (0.77)	1.86 (1.00)
Total	151	1.03 (0.60)	1.30 (0.56)	1.40 (0.60)	1.39 (0.68)	1.30 (0.72)	0.80 (0.61)	1.78 (0.61)	1.59 (0.72)